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# Data For Systemic School Improvement

NCA CASI Fall Conference

Adams Mark Hotel

October 7, 2008

# Presentation Outline

- Importance of Sharing Data with all Stakeholders
- Aligning School Plans with Corporation Initiatives
- Disaggregating Data to Identify Trends
- State Trends by Grade 2004 to 2007



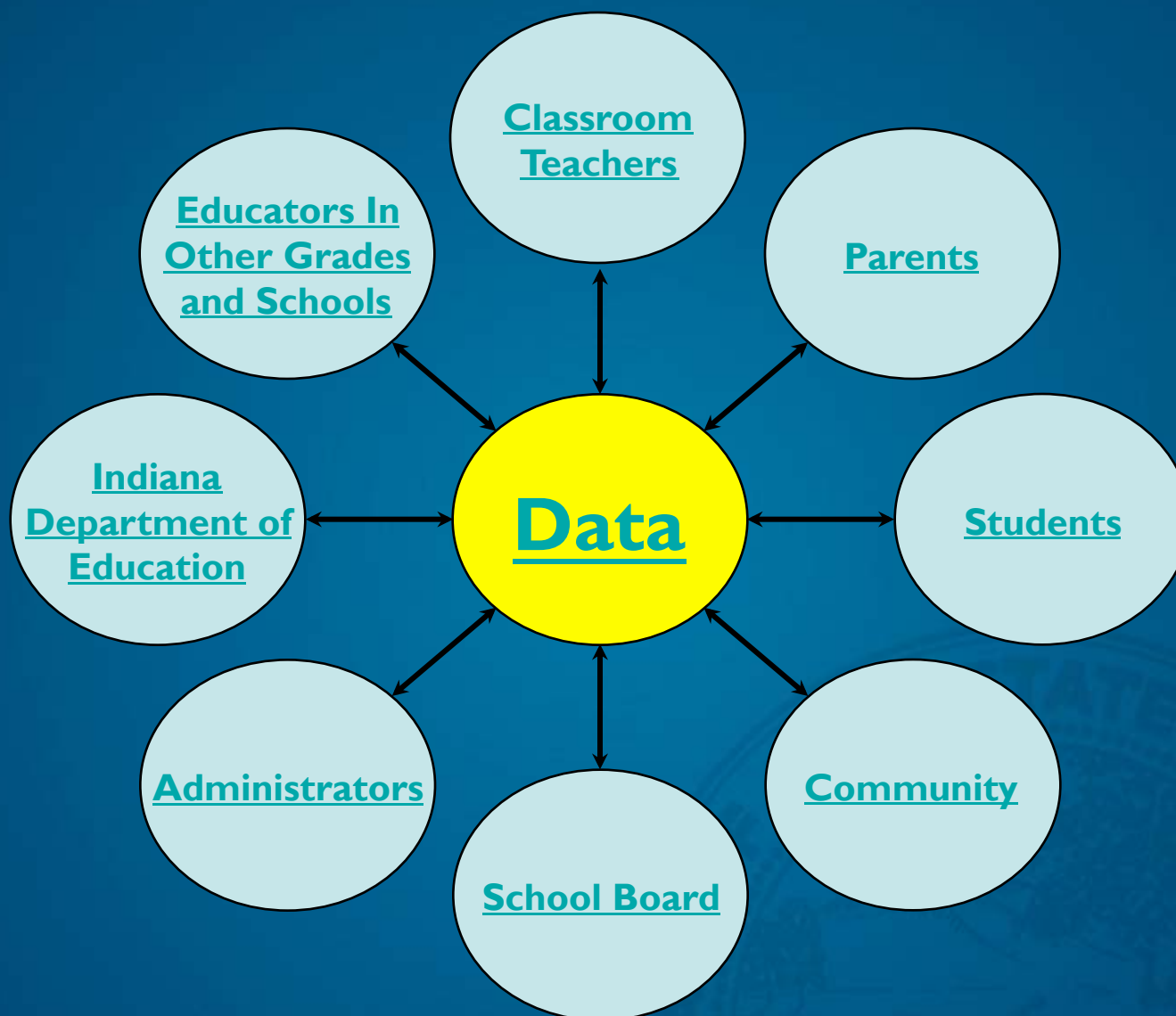
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# Focus On Data for Systemic Change

- All stakeholders, including administrators, teachers, parents, community members and students need to be aware of the data in order to make informed decisions.
- An individual piece of data has little meaning until it is compared to a larger benchmark.
- A school that has strong local assessments will rarely be surprised by statewide test results.



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# What Data Would Benefit Administrators?

- Student Level Demographic Data
- Daily / Weekly Attendance Rates
- Discipline Referral Rates
- Historical Student Level ISTEP+ Data
  - Pass / Fail Performance Over Time
  - Scale Score Improvement
  - Academic Standard Deficiencies
- Results Compared to Other Variables
  - Classroom Grades Compared to Standardized Assessments
  - Assessment Results by Previous School
  - Amount of Instructional Time by Academic Standard



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# What Data Would Benefit Teachers?



- Real time attendance and disciplinary data
- Easy access to classroom grades and student work examples and also examples from other classes
- List of instructional strategies that have been utilized and found successful for specific students
- Ability to do an item analysis of all classroom assessments to pinpoint review areas by student and possibly identify poorly constructed or unclear test questions
- Easy comparison tools that show the relationship between time spent on specific standards, classroom tests and standardized assessment results and individual student mastery by standard





# What Data Would Benefit Educators In Other Grades and Schools?



- Vertical alignment of programming
- Trend data across grade levels
- Collaborative opportunities for sharing successful instructional practices and research.
- Knowing what instructional environments work best for specific students and groups.
- Finding “Schools Like Ours”



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# What Data Would Benefit Parents?



- Understanding how the academic standards, assessments and classroom instruction are aligned.
- Being aware of daily announcements and schedules that have an effect on your child.
- Being knowledgeable about homework and classroom assignments
- Being able to monitor your child's progress on a daily basis.
- Get school delays and closings electronically.



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# Examples of Parent Access to Data

Due Date	Category	Assignment	Score	%	Grd
08/16/2004	HW	Class Rules	10/10	100	A+
08/17/2004	HW	QR 1.1	1/1	100	A+
08/19/2004	HW	Page 7	10/10	100	A+
08/20/2004	HW	QR 1.2 O	1/1	100	A+
08/20/2004	HW	Calculator Contract	5/5	100	A+
08/23/2004	HW	QR 1.2 E	1/1	100	A+
08/23/2004	HW	Pages 9/17	10/10	100	A+
08/25/2004	HW	QR 1.3	1/1	100	A+
08/25/2004	HW	Page 17	10/10	100	A+
08/27/2004	HW	Pages 19/24	10/10	100	A+
08/31/2004	Tests	Quest 1.1-1.3	18/21	85.71	B
08/31/2004	HW	QR Page 30 Section 1.5	1/1	100	A+
09/02/2004	HW	Page 30	10/10	100	A+
09/03/2004	HW	QR 1.4	0/1	0	F
09/07/2004	HW	Parametric Paragraph	10/10	100	A+
09/07/2004	HW	Page 30B (Day 7)	10/10	100	A+
09/09/2004	HW	Page 39 #3-42 (X3's), 43, 48, 50	10/10	100	A+
09/13/2004	HW	QR 1.6 page 48 evens	1/1	100	A+
09/13/2004	HW	Page 40/48	10/10	100	A+
09/17/2004	Extra Credit	Chapter 1 Review	5		
09/17/2004	HW	Page 48-50 #22-45	10/10	100	A+
09/20/2004	Tests	Chapter 1 Test	136/160	85	B

Grades last updated on 9/27/2004



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PowerSchool -Apple Corporation



# What Data Would Benefit Your School Board?



- School board members should have the “big picture” information needed to make systemic decisions for all students.
- In order to evaluate and approve local school improvement plans, members need a deeper understanding of the data.
- Data can provide evidence that programs and services are having a positive impact on learning and therefore those programs and services are cost effective.



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# What Data Would Benefit the Community?



- Business groups want to know that when students enter the workforce they have the basic skills needed to be successful.
- Realtors are using school data to answer customer questions about schools.
- Health and social service providers can efficiently target needed individuals.
- Taxpayers see the benefit of supporting education.



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# What Data Would Benefit the Indiana DOE?



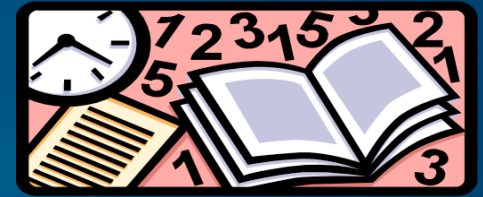
- The ability to collect and display accurate data in a timely manner
- Use data to identify statewide gaps and trends
- Use data to identify the schools in need of technical assistance
- Provide the public with user-friendly school information
- Meet state and federal accountability guidelines



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# What Data Would Benefit Students?



- Do your students know their overall grade and how it was calculated?
  - Sometimes just a score or grade by itself is not enough information.
  - A pre and post classroom questionnaire that would ask students what they know based on the Indiana Academic Standards could be given at the beginning and end of each grading period.
- Do students understand why they need to know certain concepts and how those concepts relate to the real world?
- What data do students need in order to make knowledgeable decisions about future career and life choices?



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# Aligning School Plans with Corporation Initiatives

- Do elementary schools know how their students perform as they move to middle and high school?
- Are middle and high school teachers aware of possible changes in demographic and achievement data occurring at the elementary schools?
- Do local educators communicate with other educators outside of their school? How? When?
- How does professional development assist teachers in adjusting instructional practices?
- Are trends evident at the corporation and state level that may impact individual schools?





# **Presenting and Analyzing Data Effectively for Trends**



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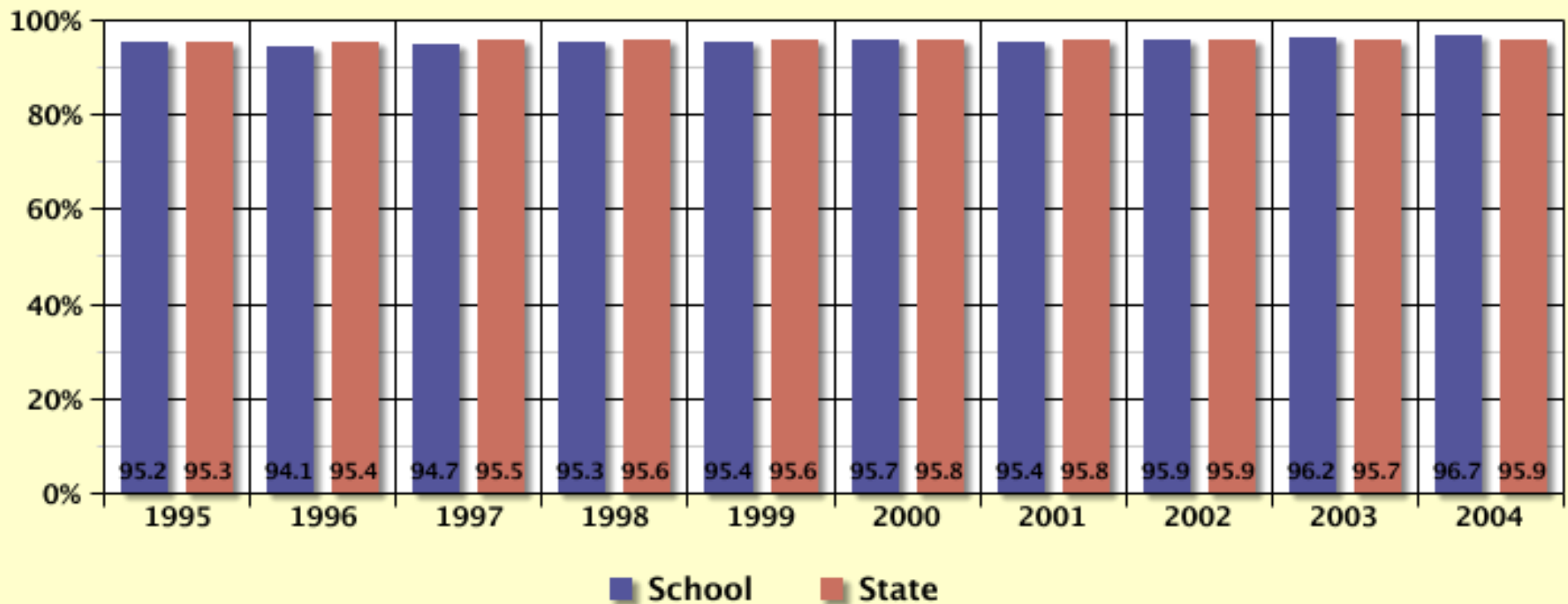
# Looking for Trends

- Looking at information over time can give you keen insight into what variables have had the greatest impact on your current condition.
- It can also predict possible future trends.
- Comparing or benchmarking your school trends with that of the local school corporation or statewide data can confirm that a trend is predictable or unique.



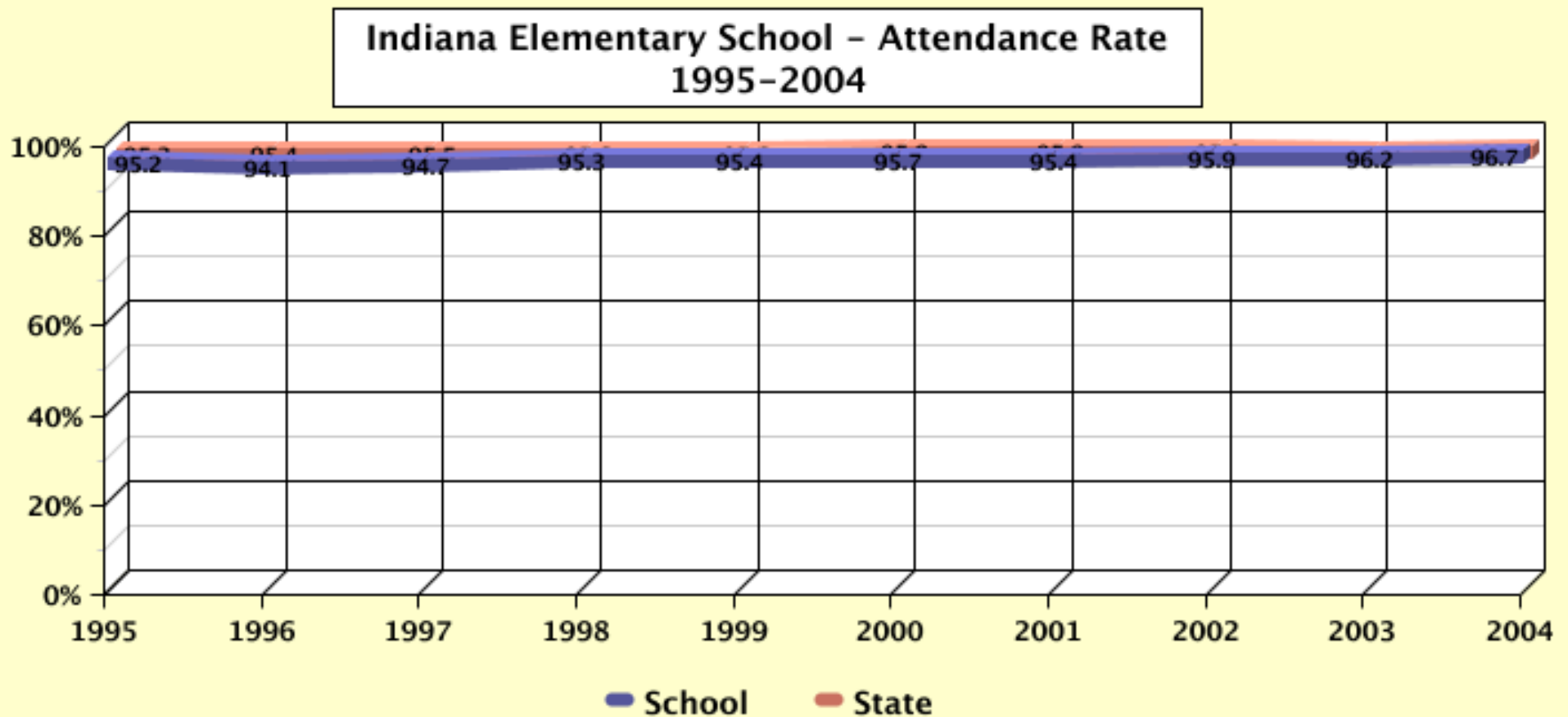
# Factual, But Not Informative

Indiana Elementary School - Attendance Rate  
1995-2004



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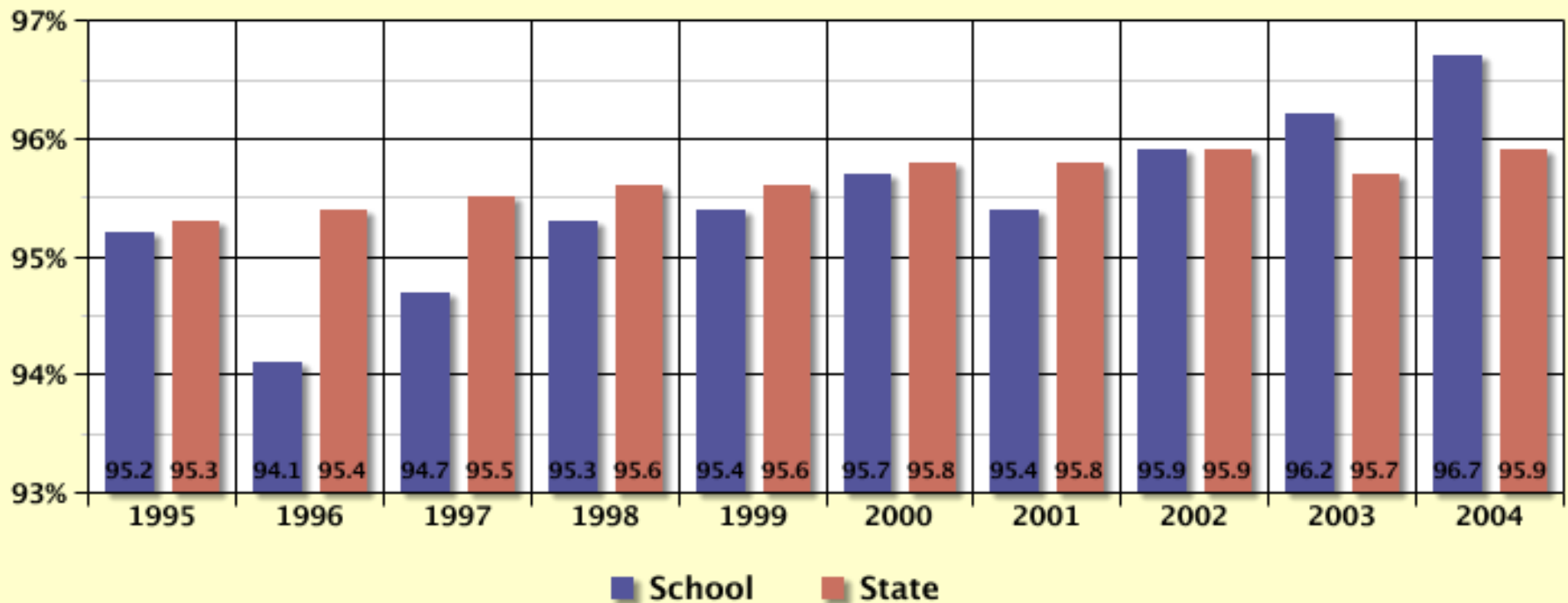
# Factual, But Not Informative



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# Factual and Informative

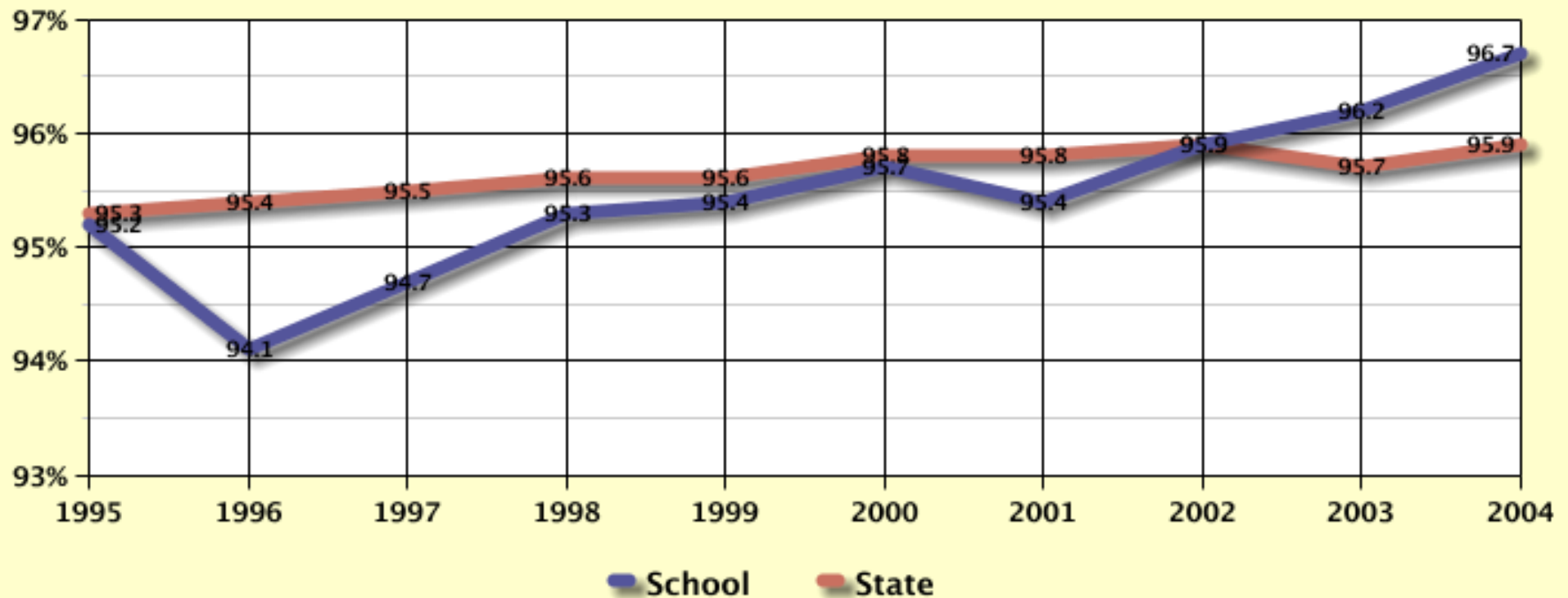
Indiana Elementary School - Attendance Rate  
1995-2004



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# Factual and Informative

Indiana Elementary School - Attendance Rate  
1995-2004



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# Possible Attendance Variables

## Positives

- Clear Policies and Procedures
- Supportive Home Life
- Participation in school activities/sports
- Engaging Instruction
- Challenging Curriculum
- Highly Motivated
- Convenient Transportation
- Community Support

## Negatives

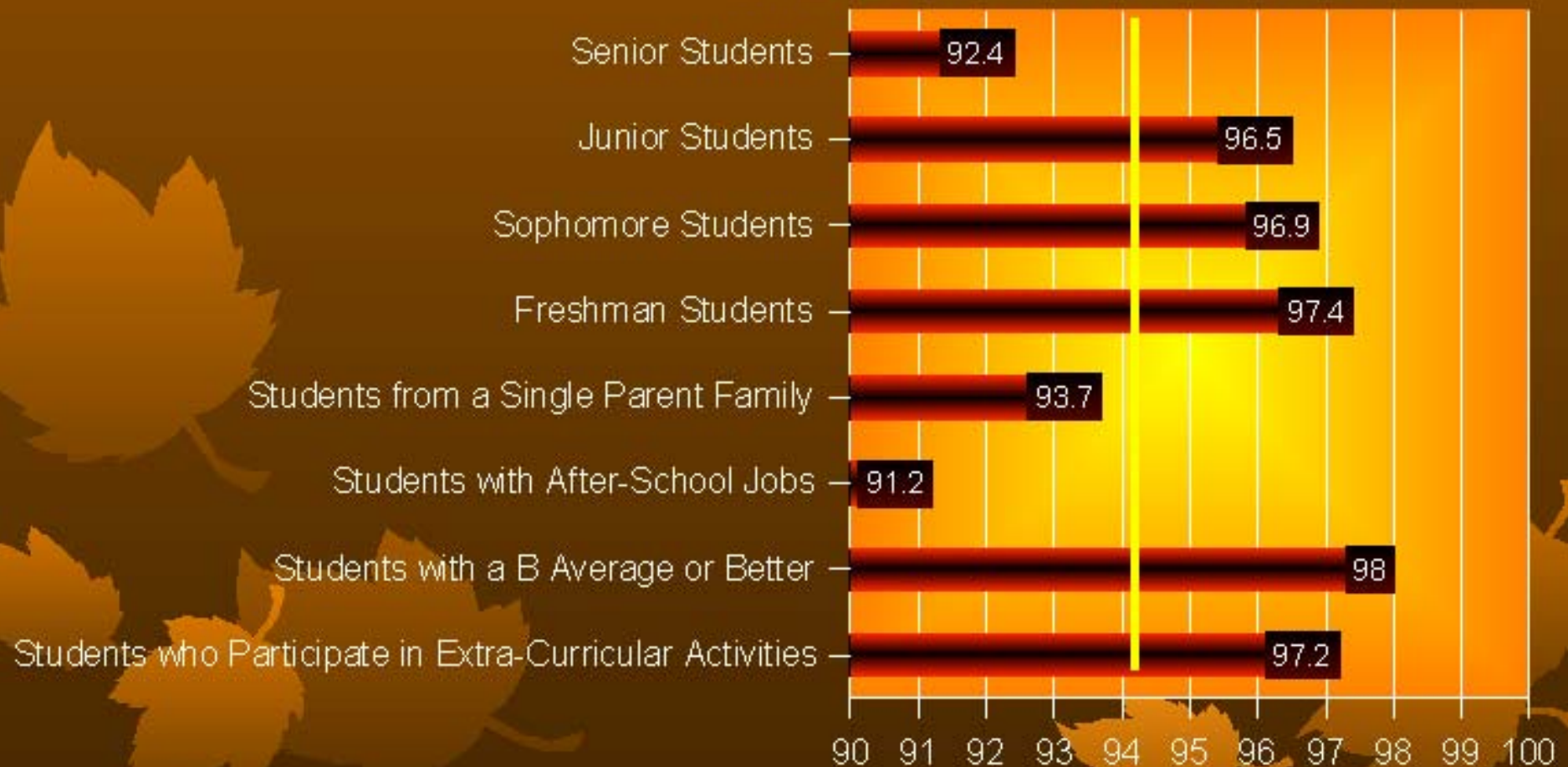
- Don't hold students accountable
- Lack of Parent Involvement
- Job Responsibilities
- Lack of Interest
- Too Involved in Outside School Activities
- Not Prepared for Class
- Substitute Teachers
- Sickness
- Afraid to Come to School
- Family Conflicts
- Weather Conditions
- Lack of Transportation



# Student Attendance

## Disaggregation of Data

**Average School Attendance 95.2**



# Disaggregating Data to Identify Trends



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# Going Deeper Into The Data

- If your population size is large enough, drilling down to the next level of data can shed even more light on the chosen topic.
- Every topic has multiple variants that can have a profound impact on results.
- You probably don't have time to disaggregate every possible variant, so choose wisely.



# Why Disaggregate???

- Confirm or Refute Perceptions
- Ensures Equity for All Students
- Offers Better Understanding of Situational Conditions
- Provides Information Needed to Make Informed Decisions



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# Why Disaggregate?

**Statement:**

**Your car has an average tire pressure of 27 pounds. Is this adequate?**

**Disaggregated Data**

**Tire 1 - 32 Tire 2 – 32 Tire 3 - 32 Tire 4 - 12**



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# Why Disaggregate???

## Statement:

Only 5% of Indiana residents have reported symptoms of the new virus.

## Disaggregated Data by County

All counties reported 0% except for Lake at 21%, LaPorte at 24% and Porter at 36%.



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# Why Disaggregate???

**Statement:**

**76% of all 3<sup>rd</sup> Graders Passed the 2007  
ISTEP+.**



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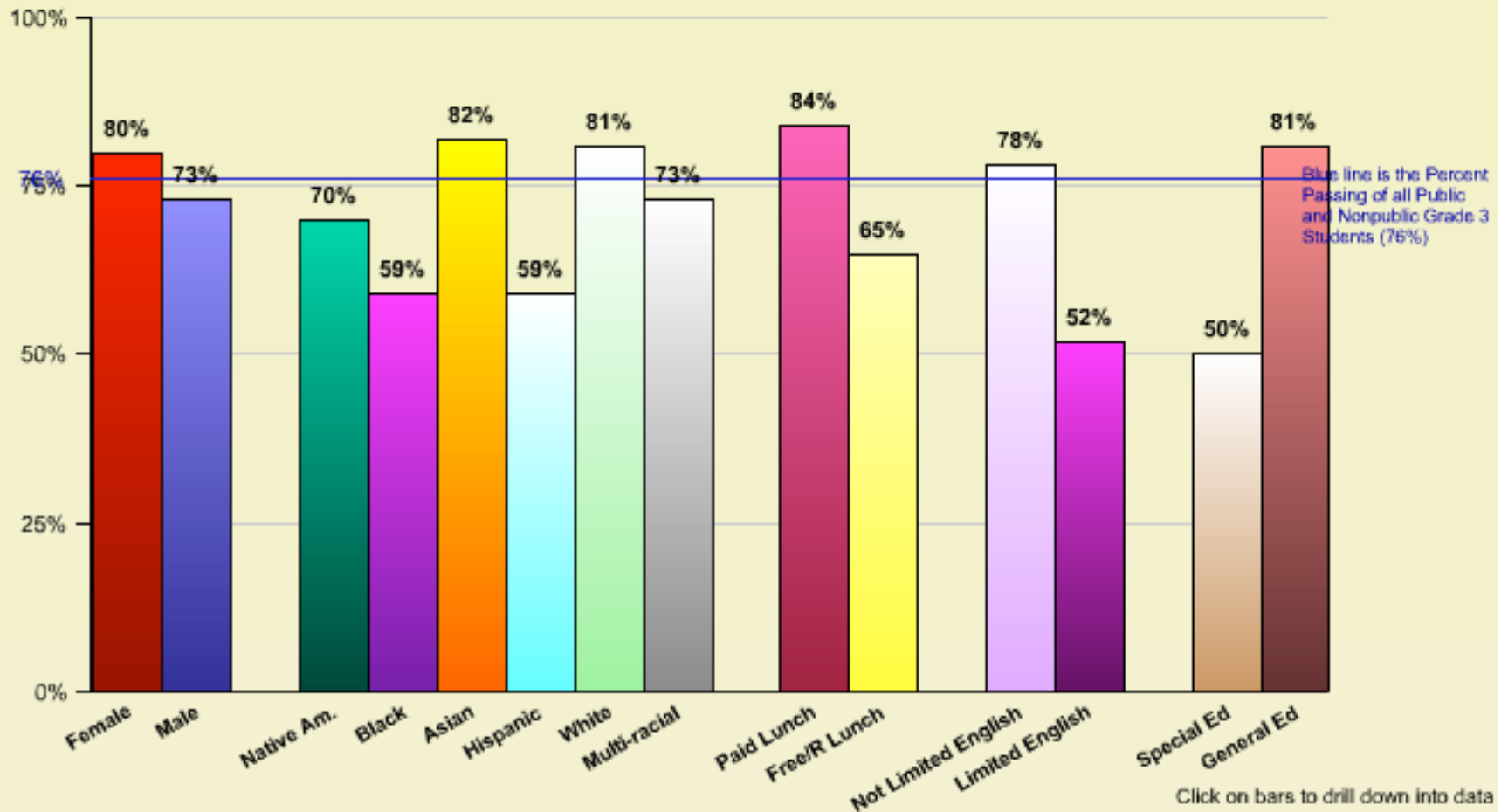
# Grade Three

State Total, Public and Nonpublic

English/Language Arts: Pct Passing

Grade 3

2007-08



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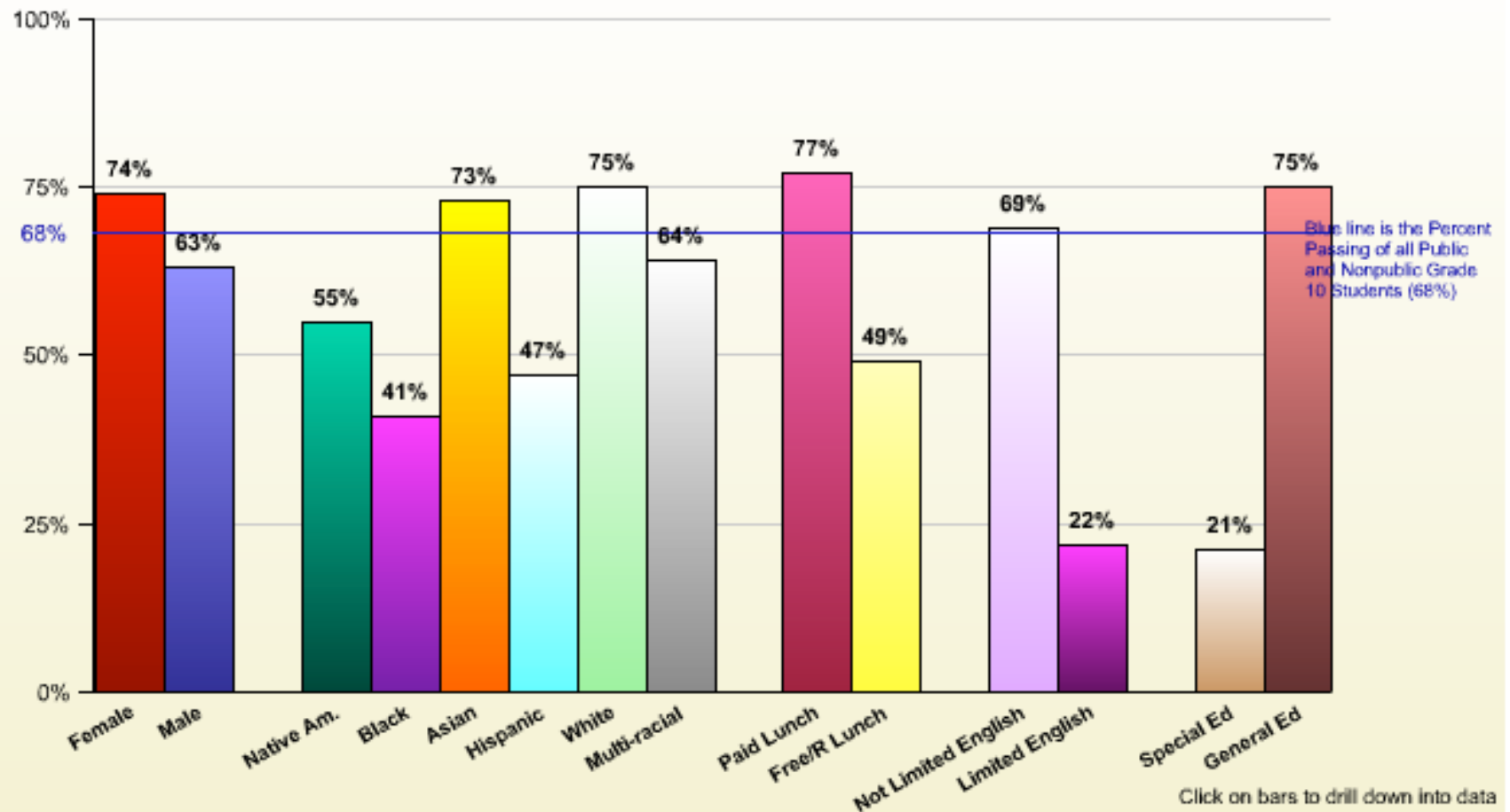
# Grade 10

State Total, Public and Nonpublic

English/Language Arts: Pct Passing

Grade 10

2007-08



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# Disaggregated ISTEP+ Data Percent Passing by Grade



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# ISTEP+ % Passing

The following charts display:

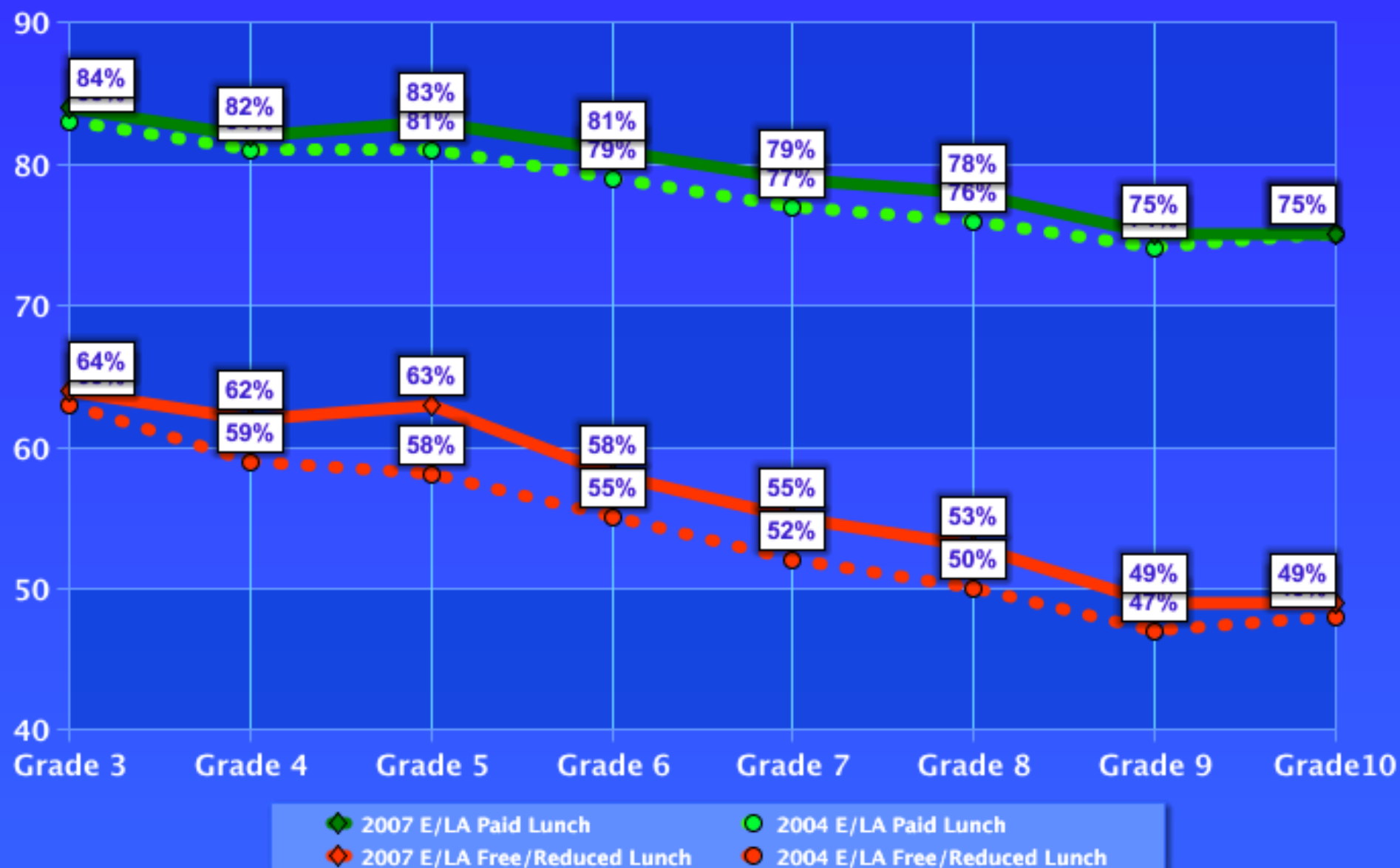
- two years of data (2004 & 2007 ISTEP+).
- percent passing for Math and for English/  
Language Arts.
- data for grades 3-10
- disaggregated student groups results
- achievement gaps between groups



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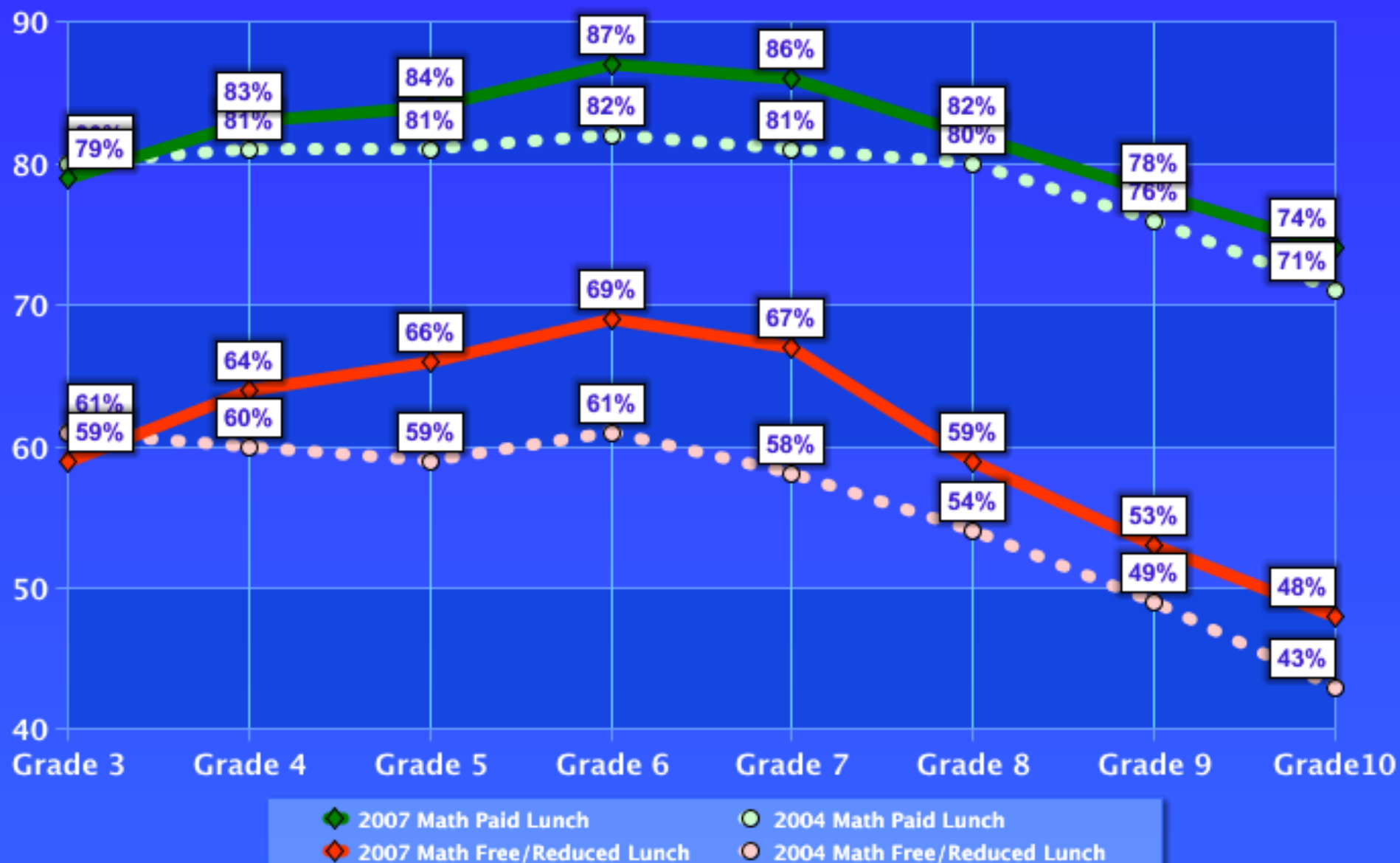


## 2007 English/Language Arts ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Poverty



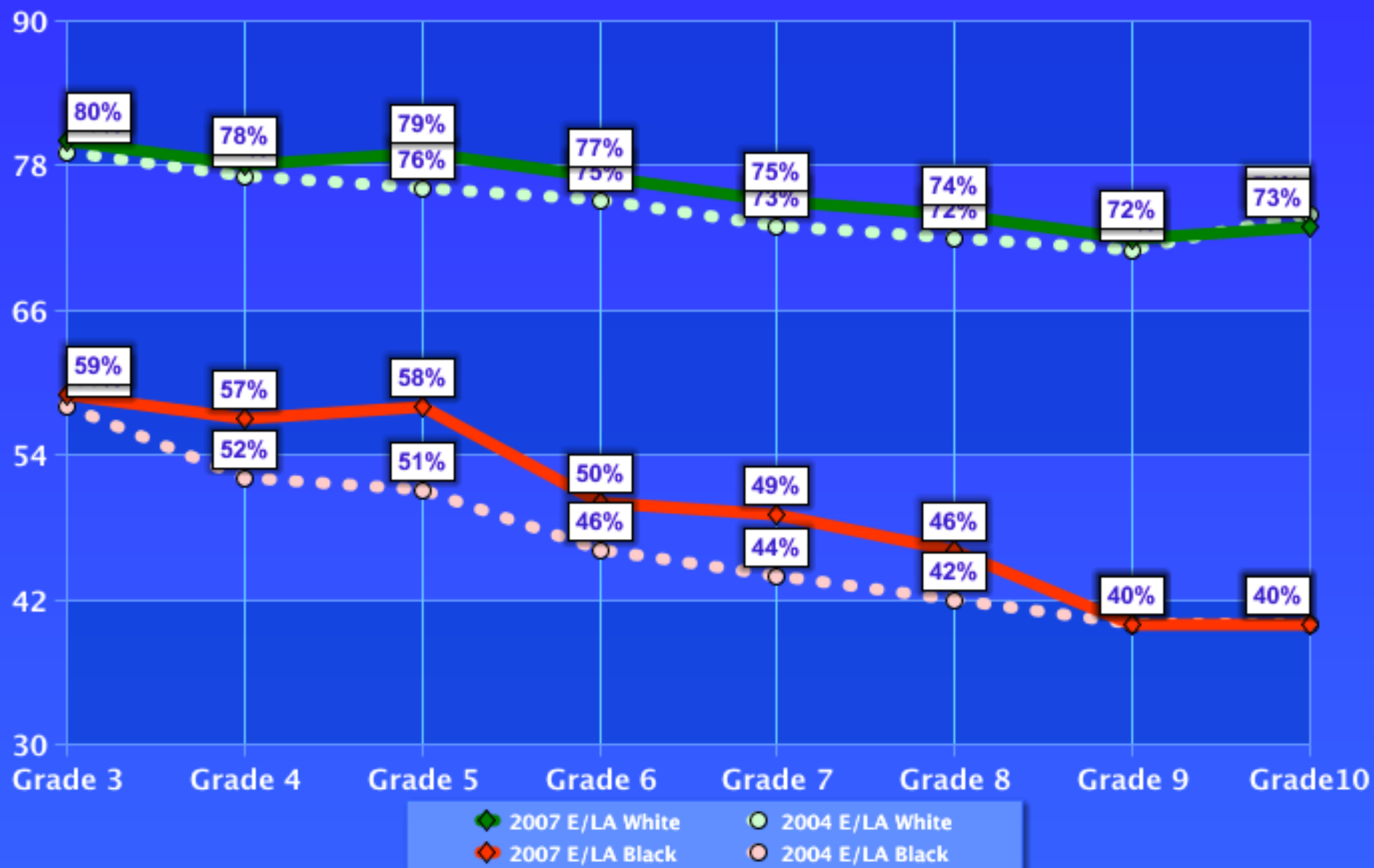
**Gap Between Paid and Free/Reduced Lunch Students**

## 2007 Mathematics ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Poverty



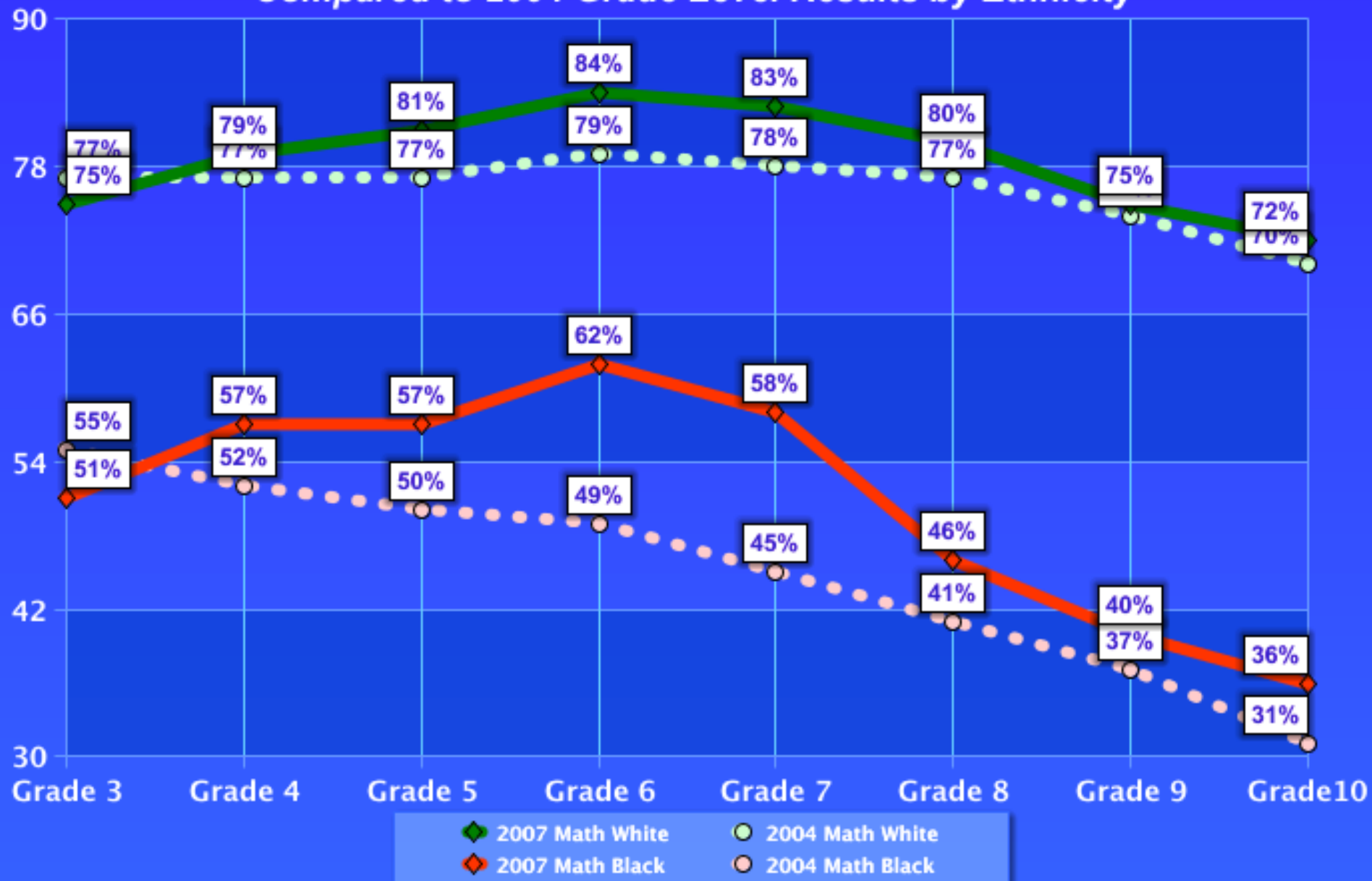
**Gap Between Paid and Free/Reduced Lunch Students**

## 2007 English/Language Arts ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Ethnicity



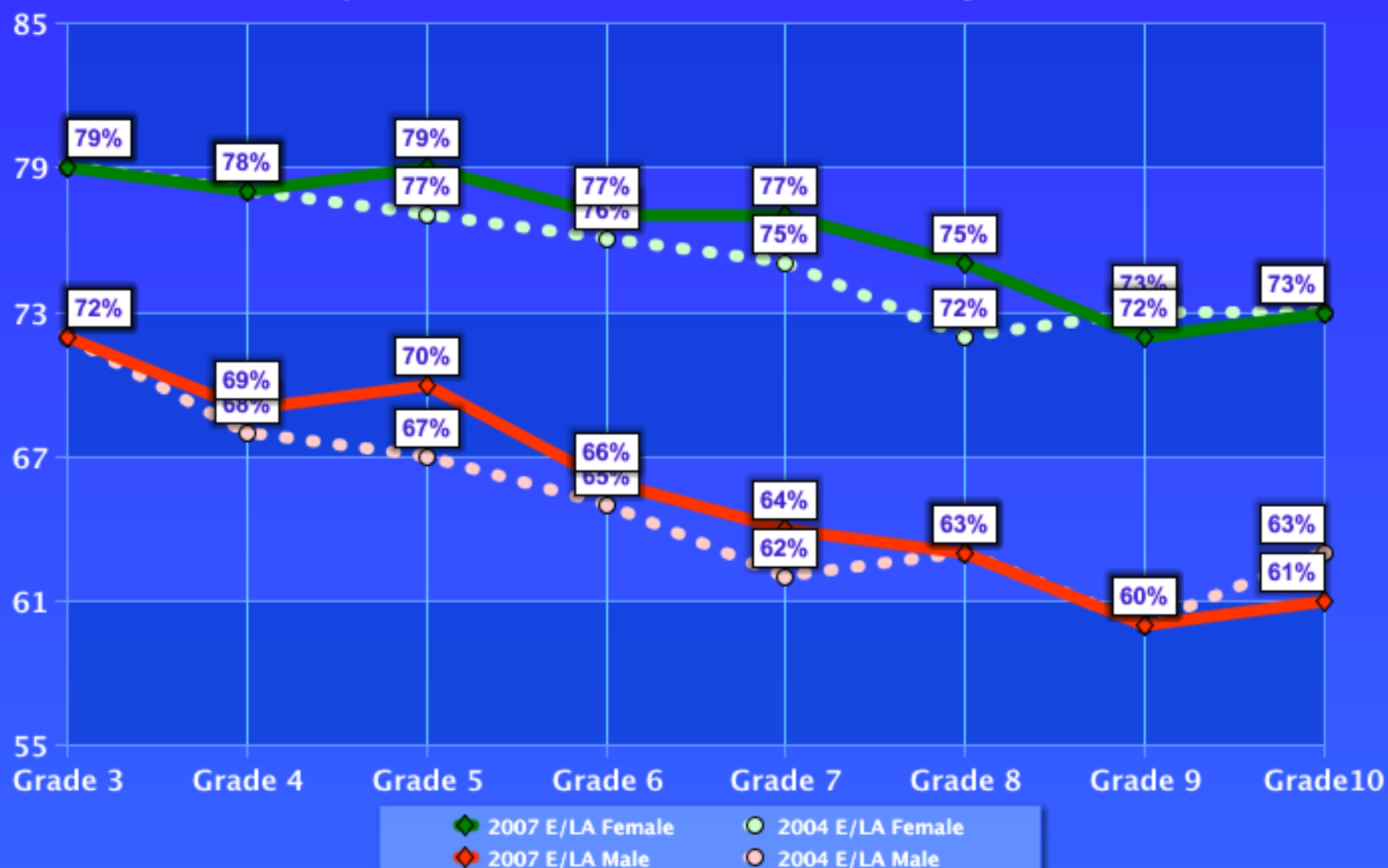
**Gap Between White and Black Students**

# **2007 Mathematics ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Ethnicity**



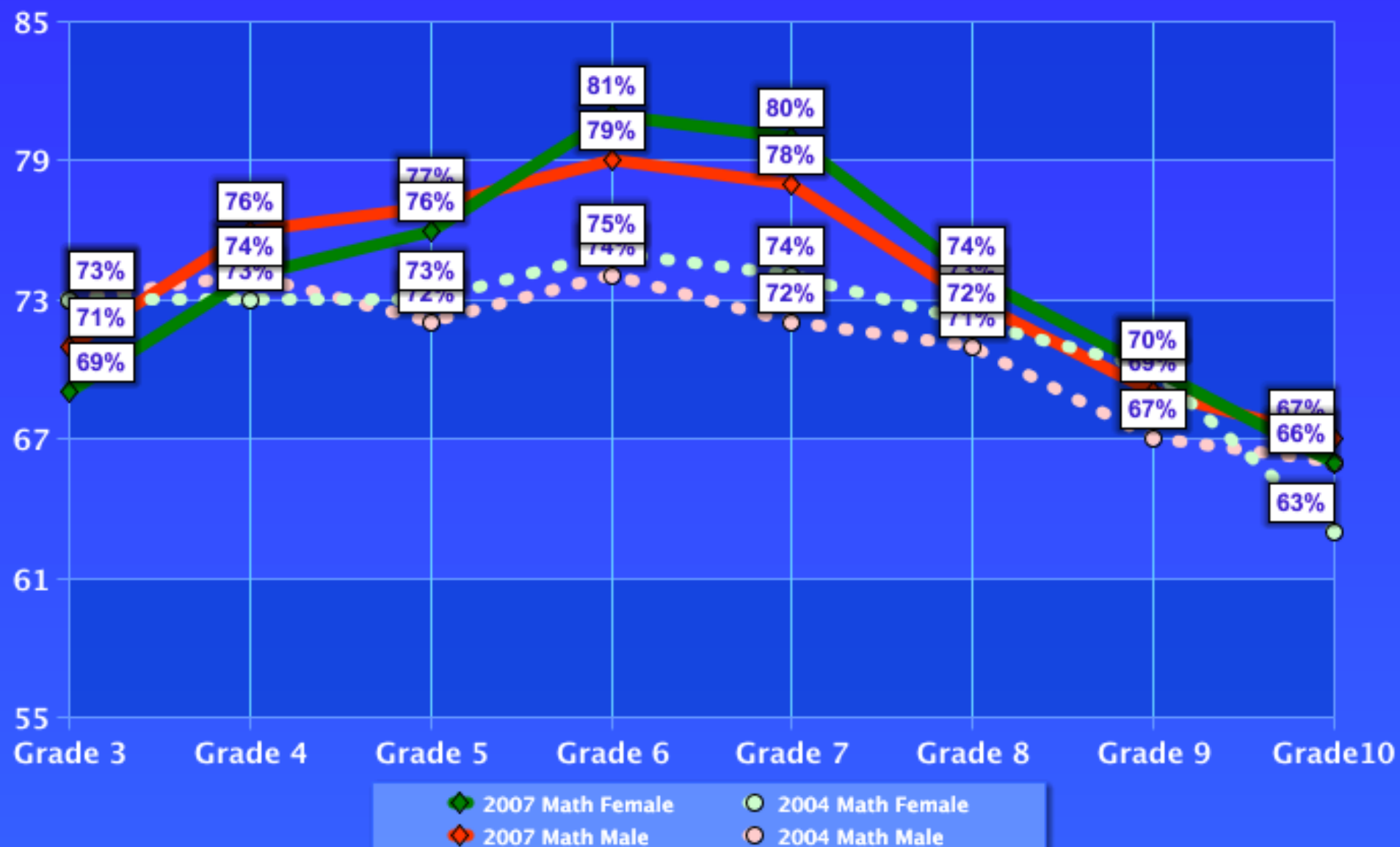
**Gap Between White and Black Students**

## 2007 English/Language Arts ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Gender



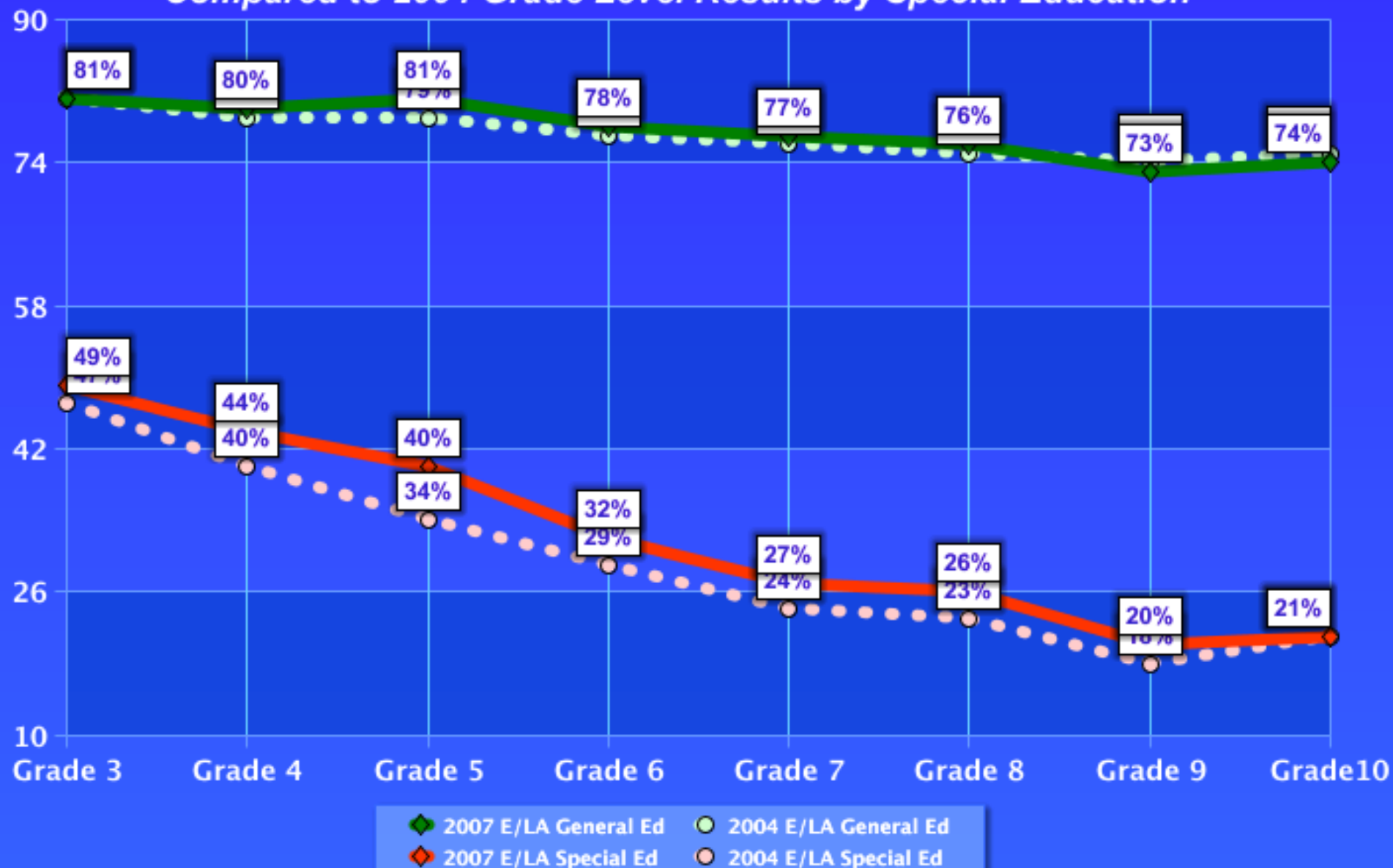
**Gap Between Female and Male Students**

# **2007 Mathematics ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Gender**



**Gap Between Female and Male Students**

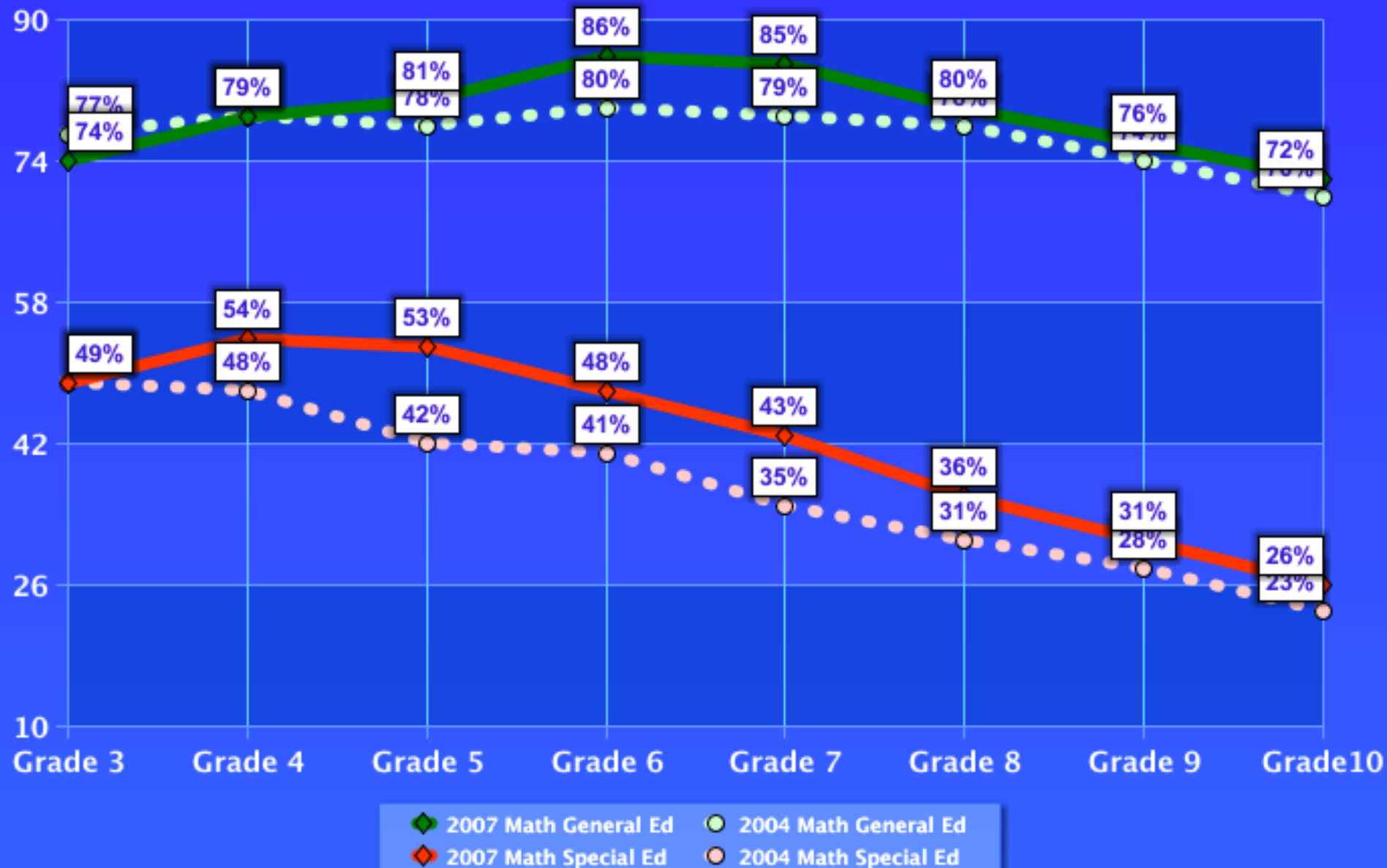
## 2007 English/Language Arts ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Special Education



**Gap Between General and Special Education Students**



## 2007 Mathematics ISTEP+ Percent Passing Compared to 2004 Grade Level Results by Special Education



**Gap Between General and Special Education Students**

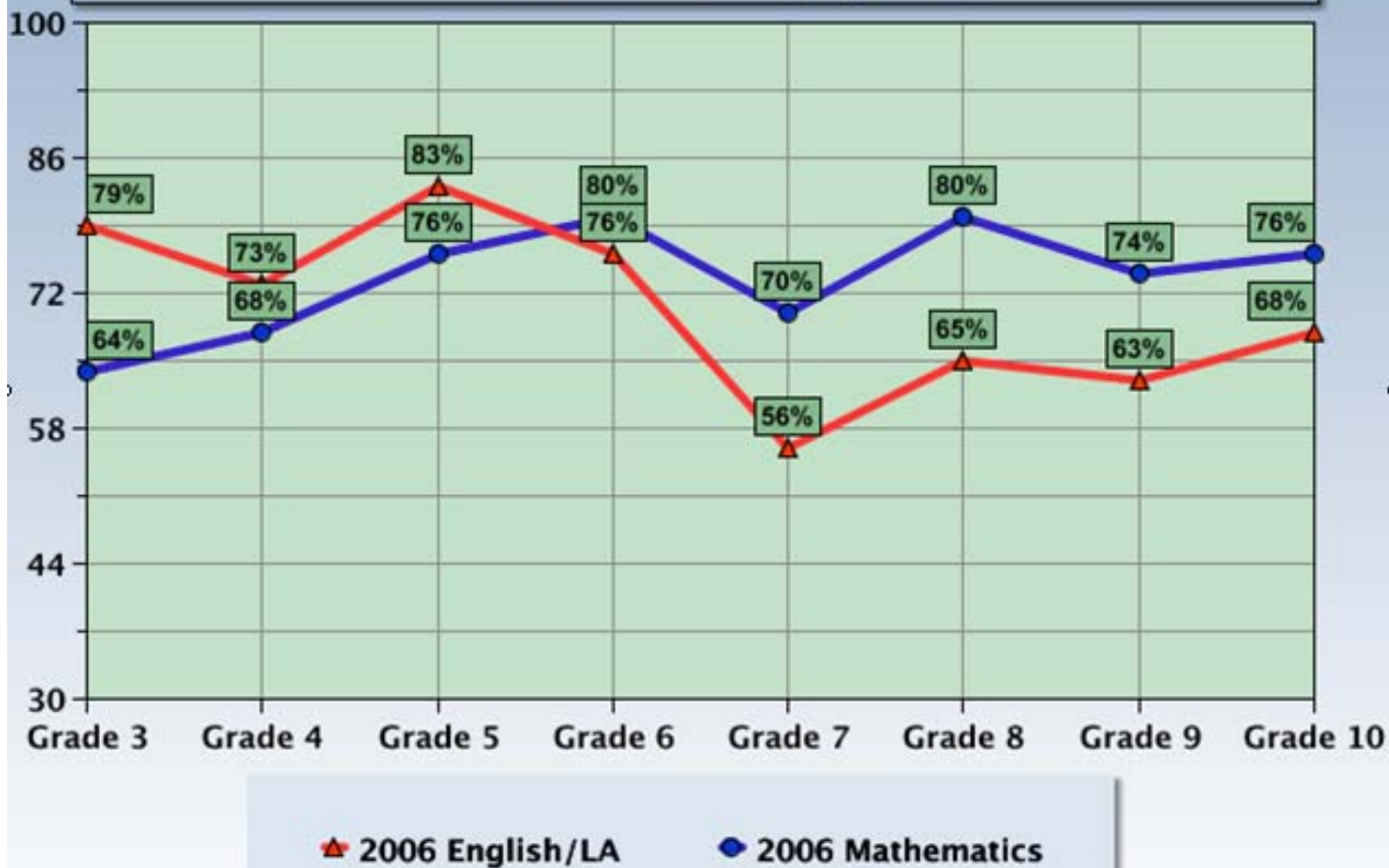
# Analyzing Results

- Determine areas of concern and growth over time
- Cohort improvement
- Grade level improvement.

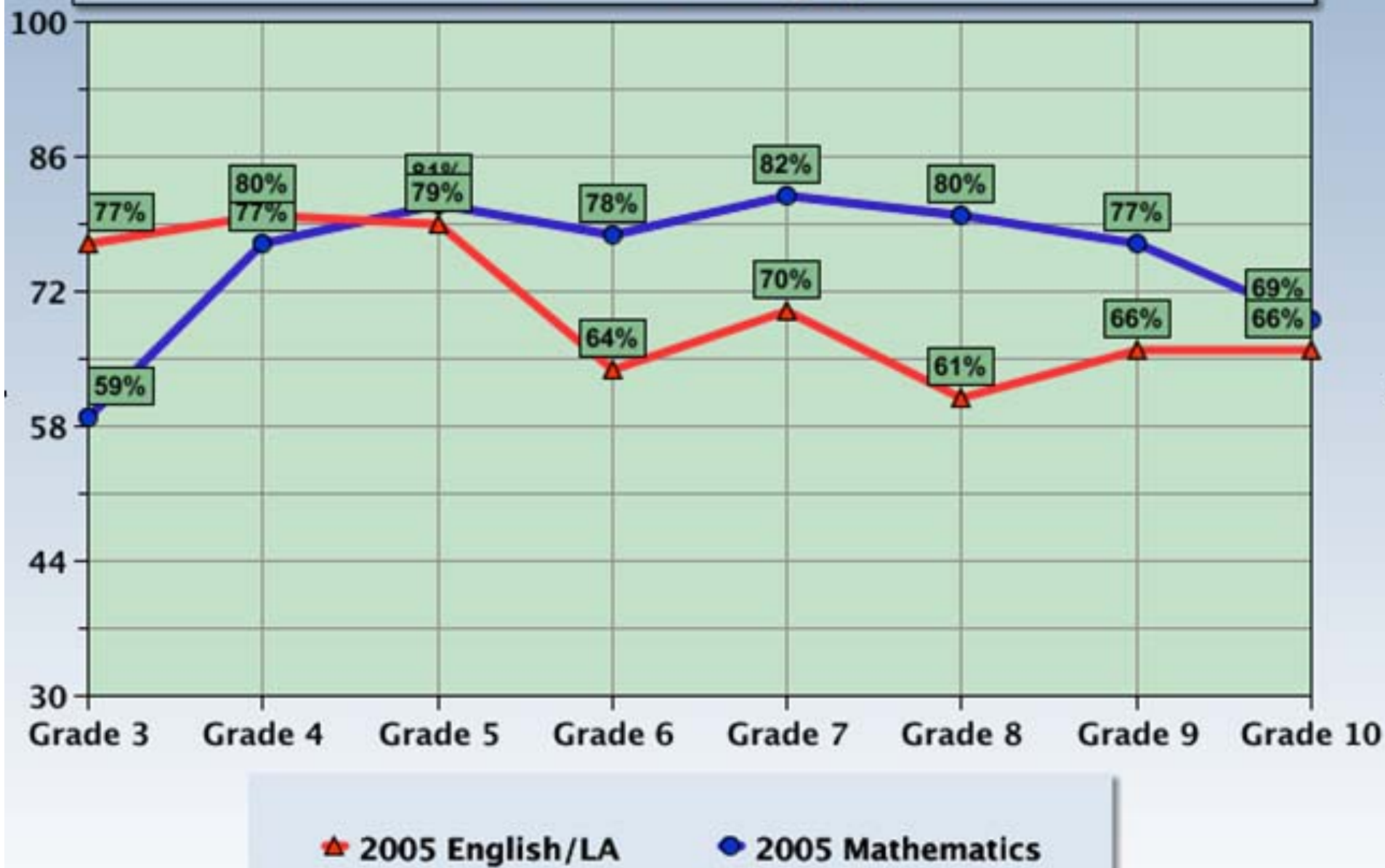


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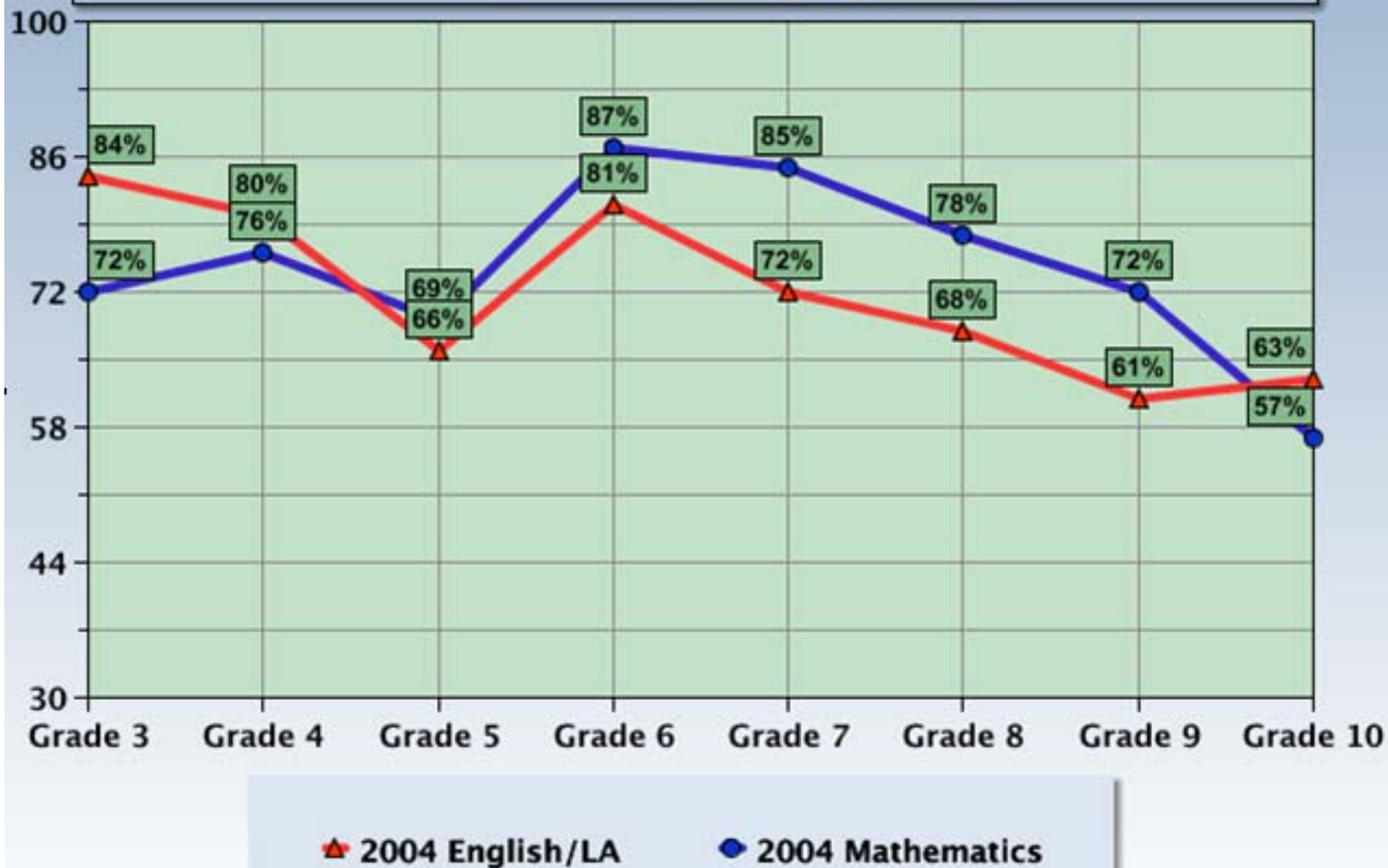
## 2006 ISTEP+ English/Language Arts and Mathematics Percent Passing by Grade



## 2005 ISTEP+ English/Language Arts and Mathematics Percent Passing by Grade

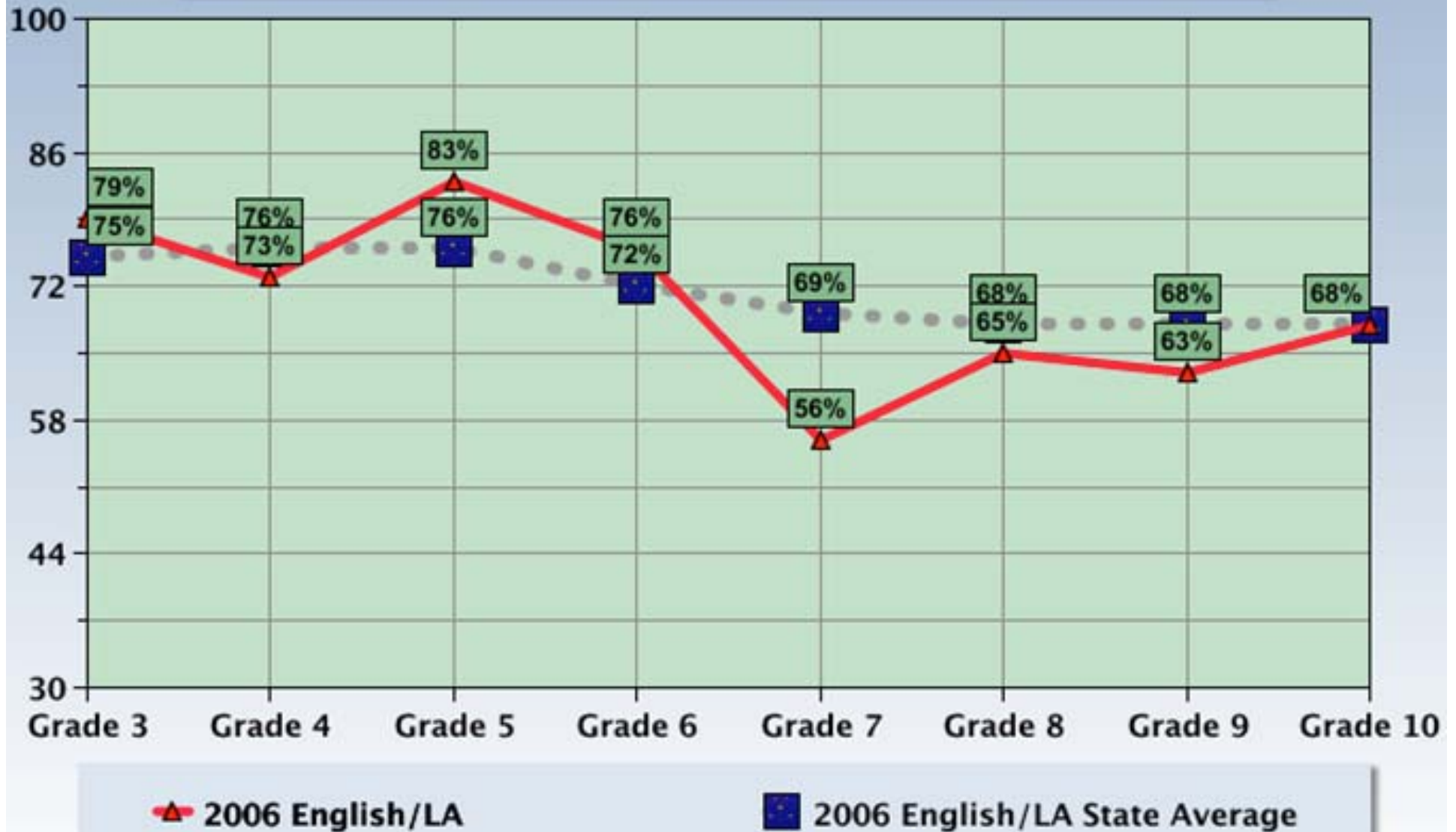


## 2004 ISTEP+ English/Language Arts and Mathematics Percent Passing by Grade

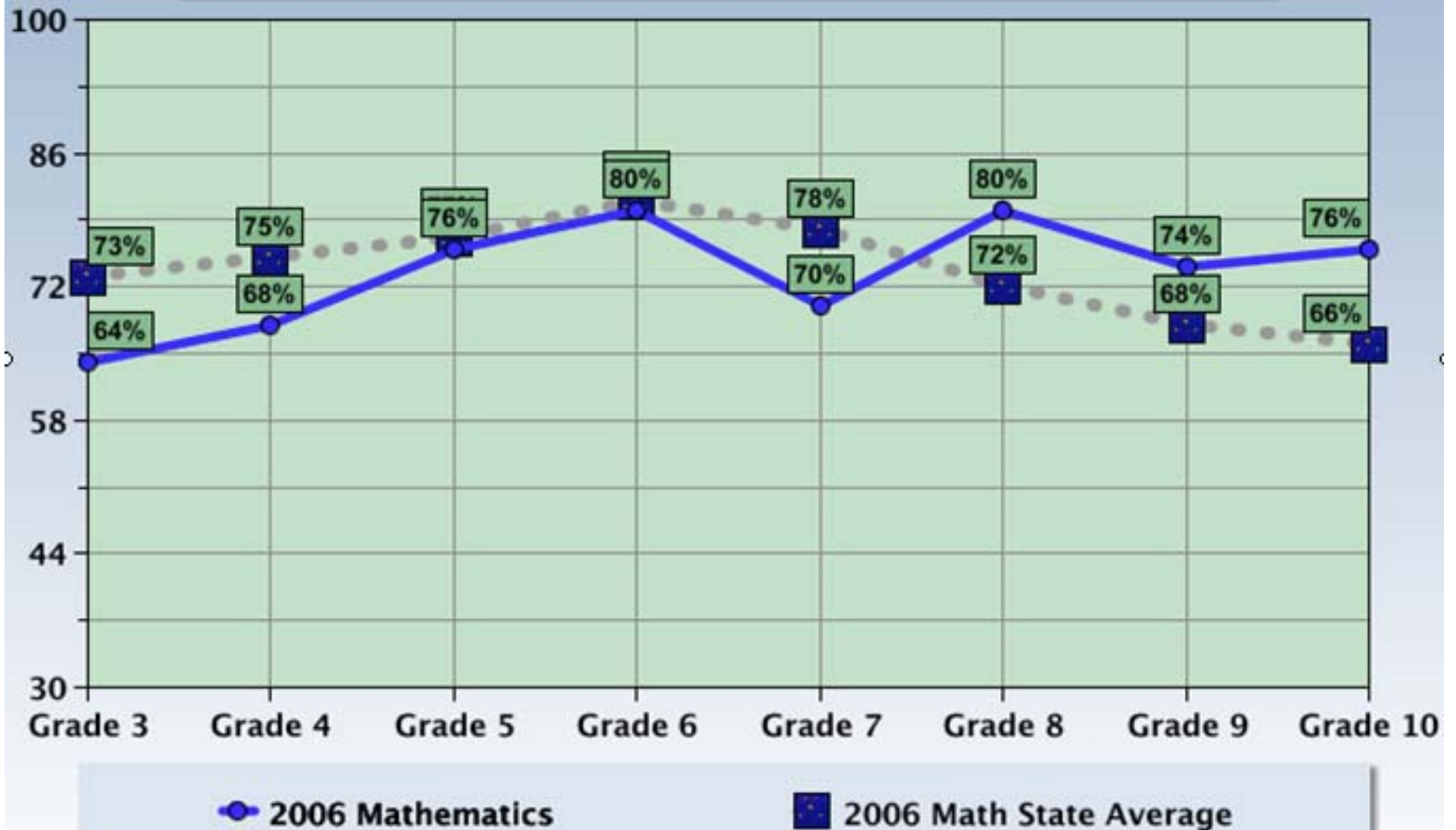




## 2006 ISTEP+ English/ Language Arts Percent Passing Compared to State Average

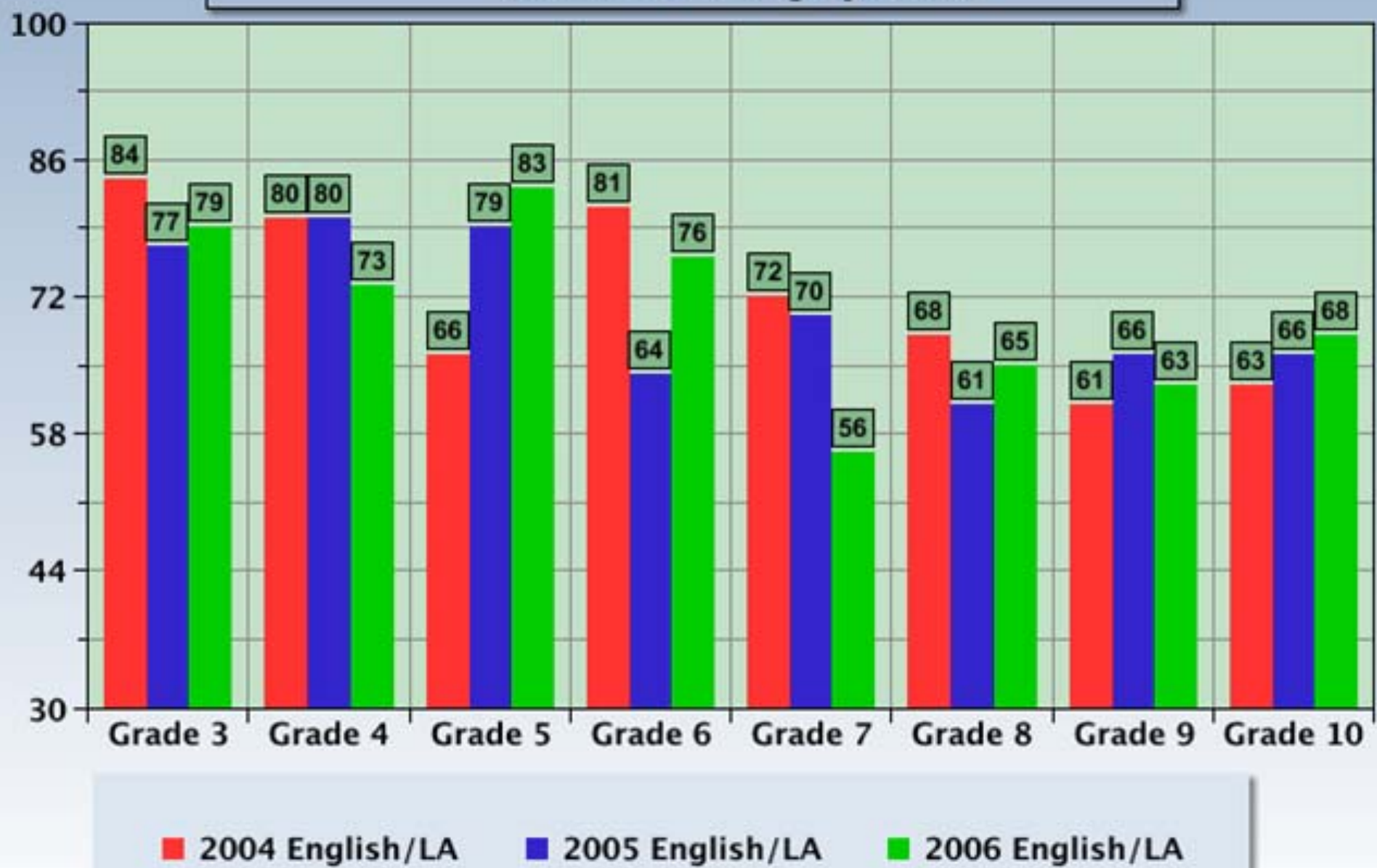


## 2006 ISTEP+ Mathematics Percent Passing Compared to State Average

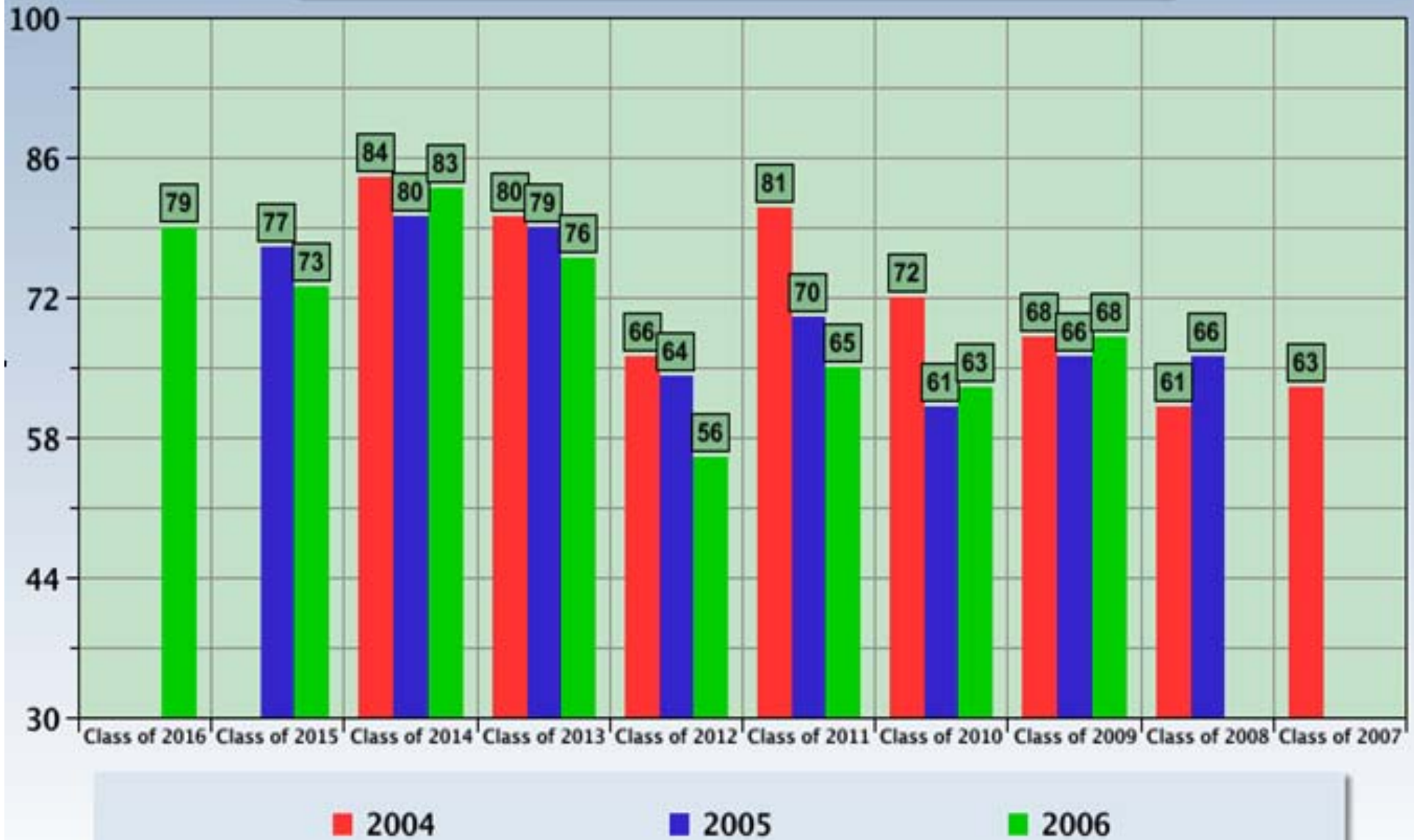




## 2004 to 2006 ISTEP+ English/Language Arts Percent Passing by Grade



## 2004 to 2006 ISTEP+ English/Language Arts Percent Passing by Cohort



# ***Indiana Achievement Gap Within Ethnic Groups***

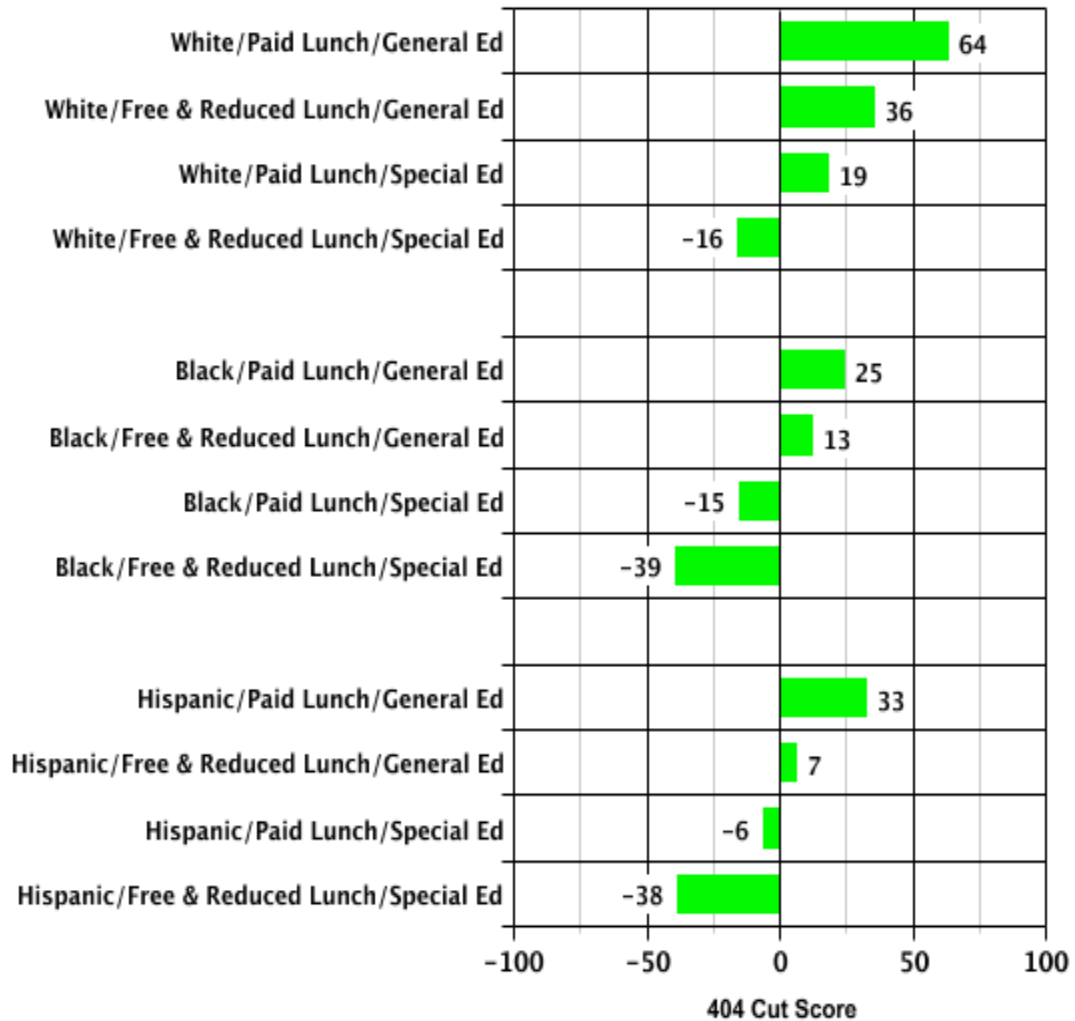
## ***2007-08 ISTEP+ Results***

### ***Grades 3, 6, 8 & 10***

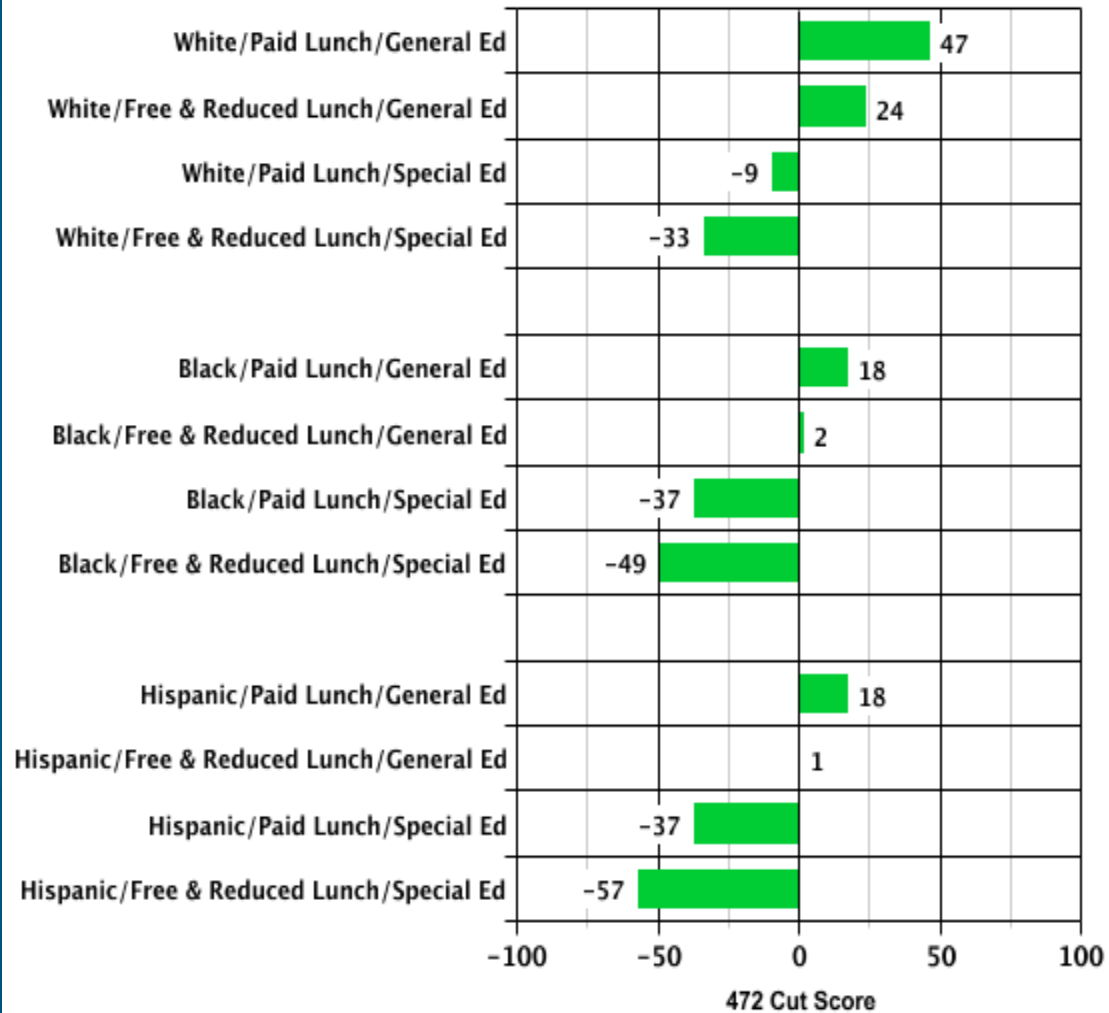


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**2007 ISTEP+ Grade 3**  
**State Average Points Above or Below the Scale Score (404)**  
**English/ Language Arts Disaggregated by Ethnicity Sub-Groups**



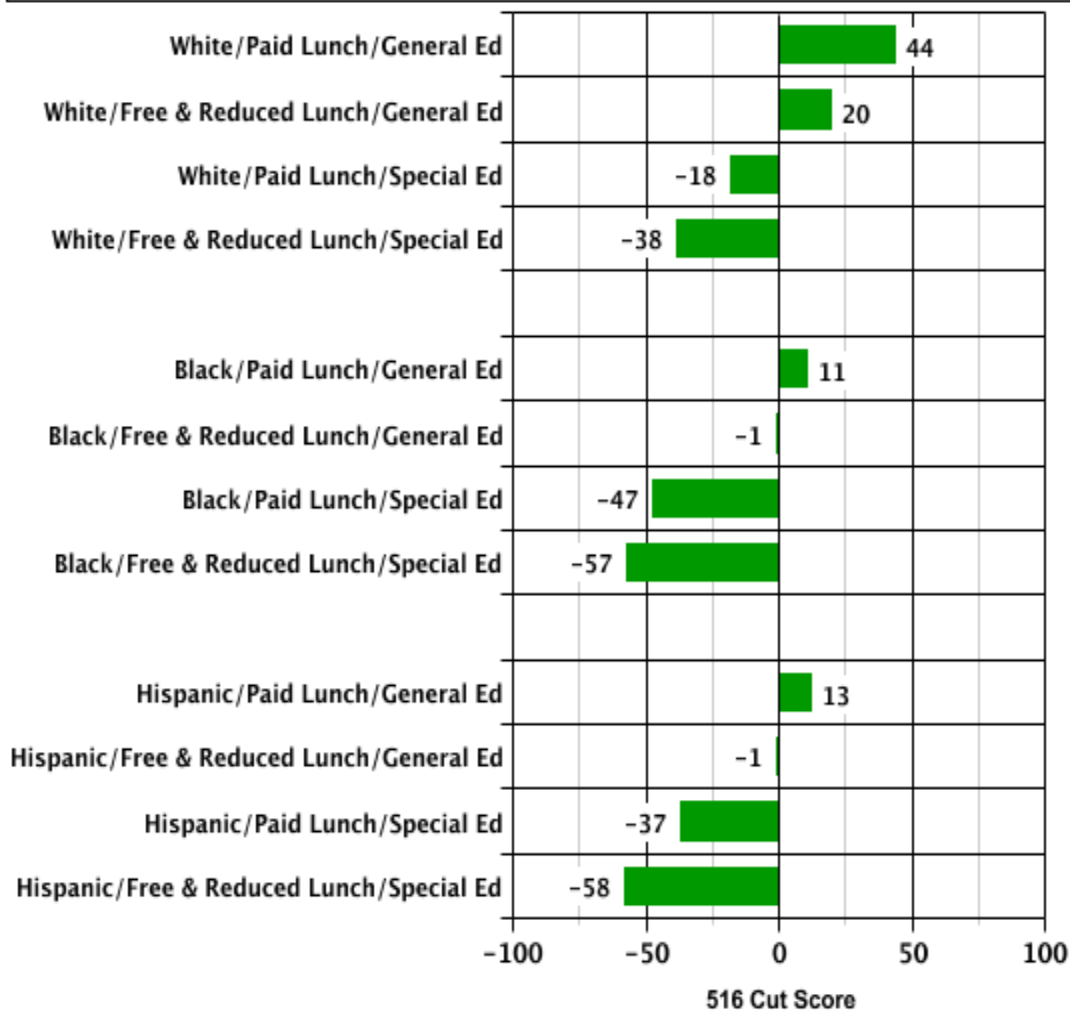
**2007 ISTEP+ Grade 6**  
**State Average Points Above or Below the Scale Score (472)**  
**English/ Language Arts Disaggregated by Ethnicity Sub-Groups**



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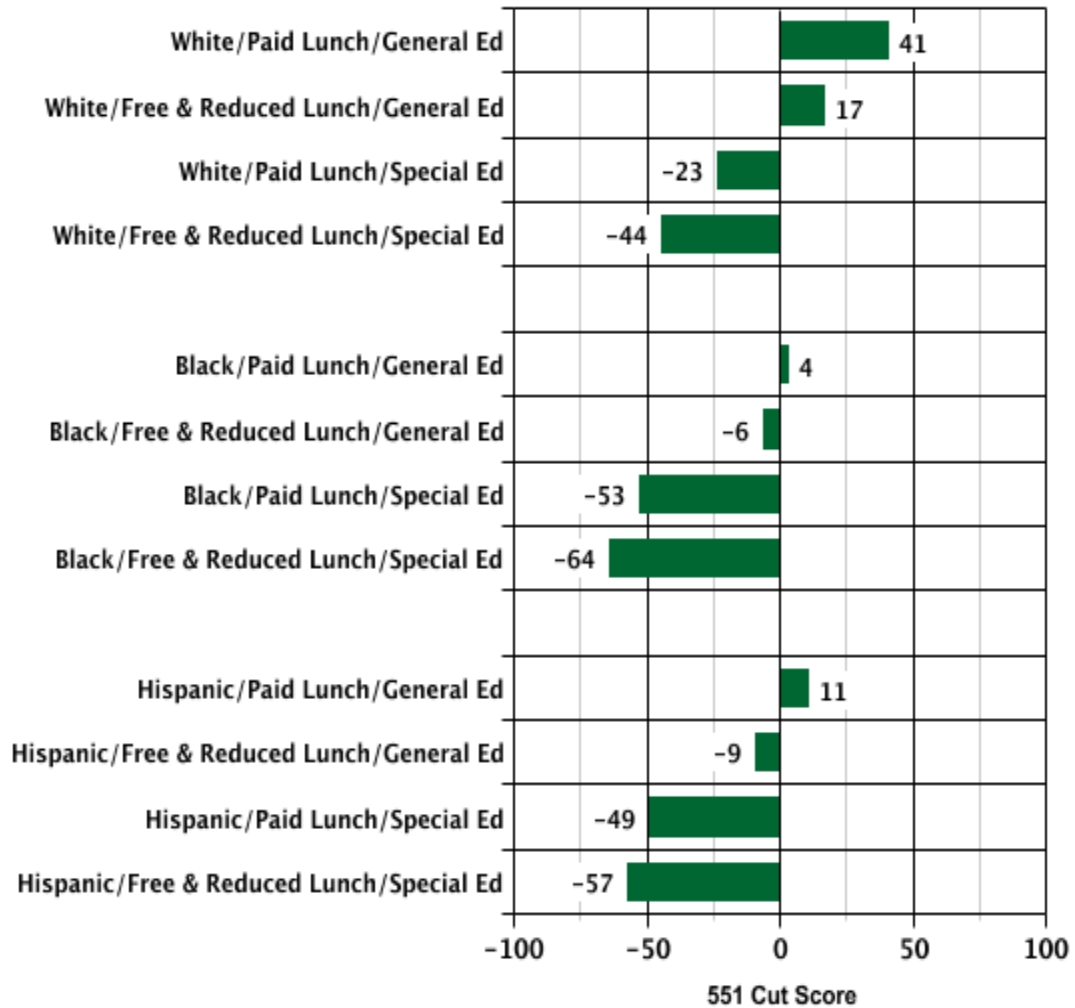


**2007 ISTEP+ Grade 8**  
**State Average Points Above or Below the Scale Score (516)**  
**English/ Language Arts Disaggregated by Ethnicity Sub-Groups**



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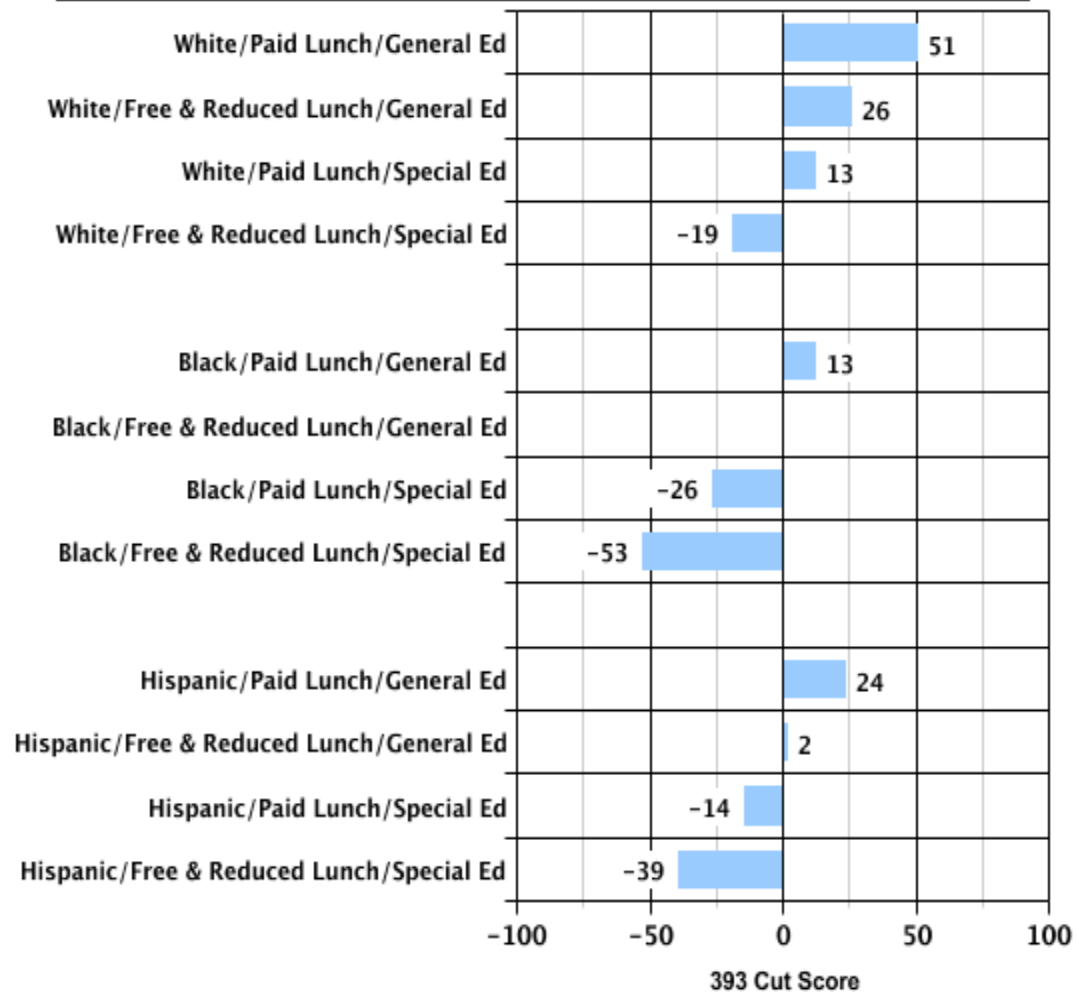
**2007 ISTEP+ Grade 10**  
**State Average Points Above or Below the Scale Score (551)**  
**English/ Language Arts Disaggregated by Ethnicity Sub-Groups**



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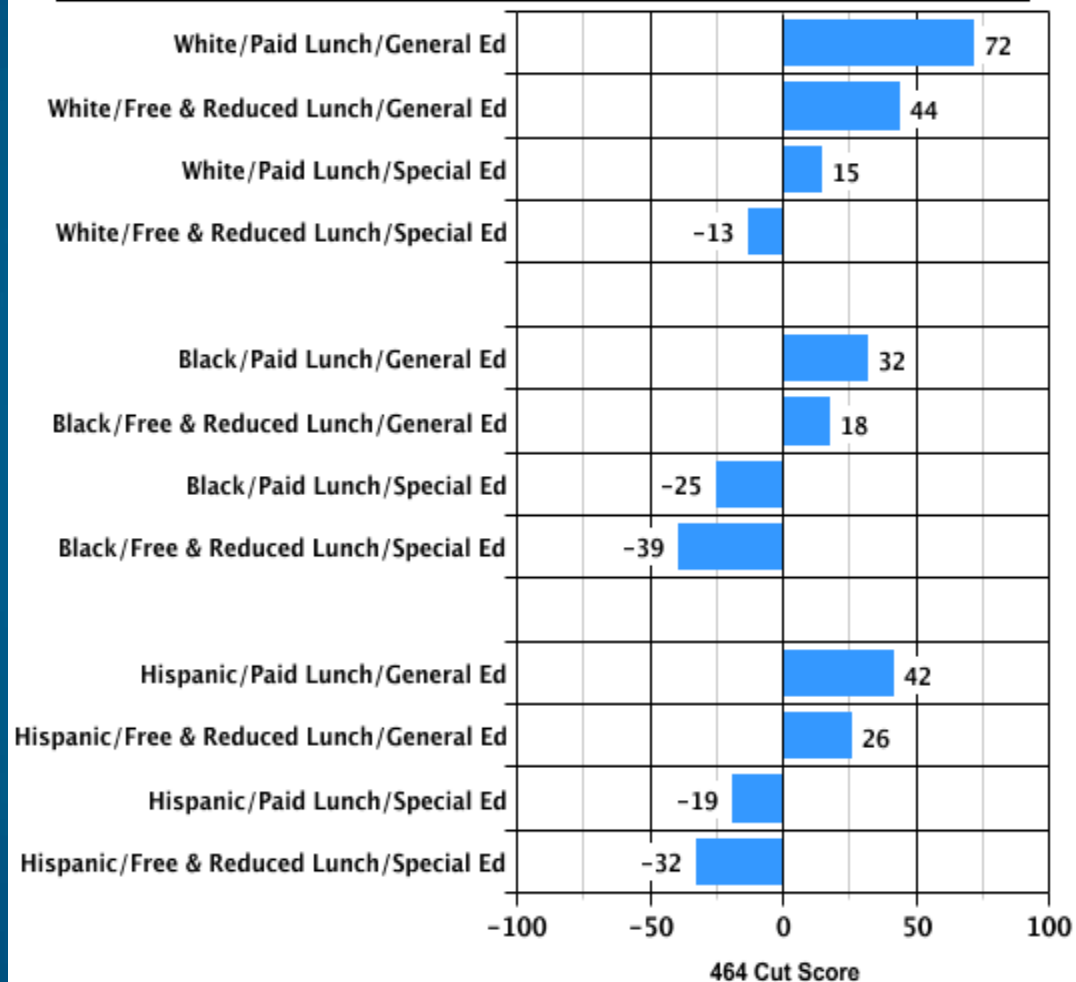


**2007 ISTEP+ Grade 3  
State Average Points Above or Below the Scale Score (393)  
Mathematics Disaggregated by Ethnicity Sub-Groups**

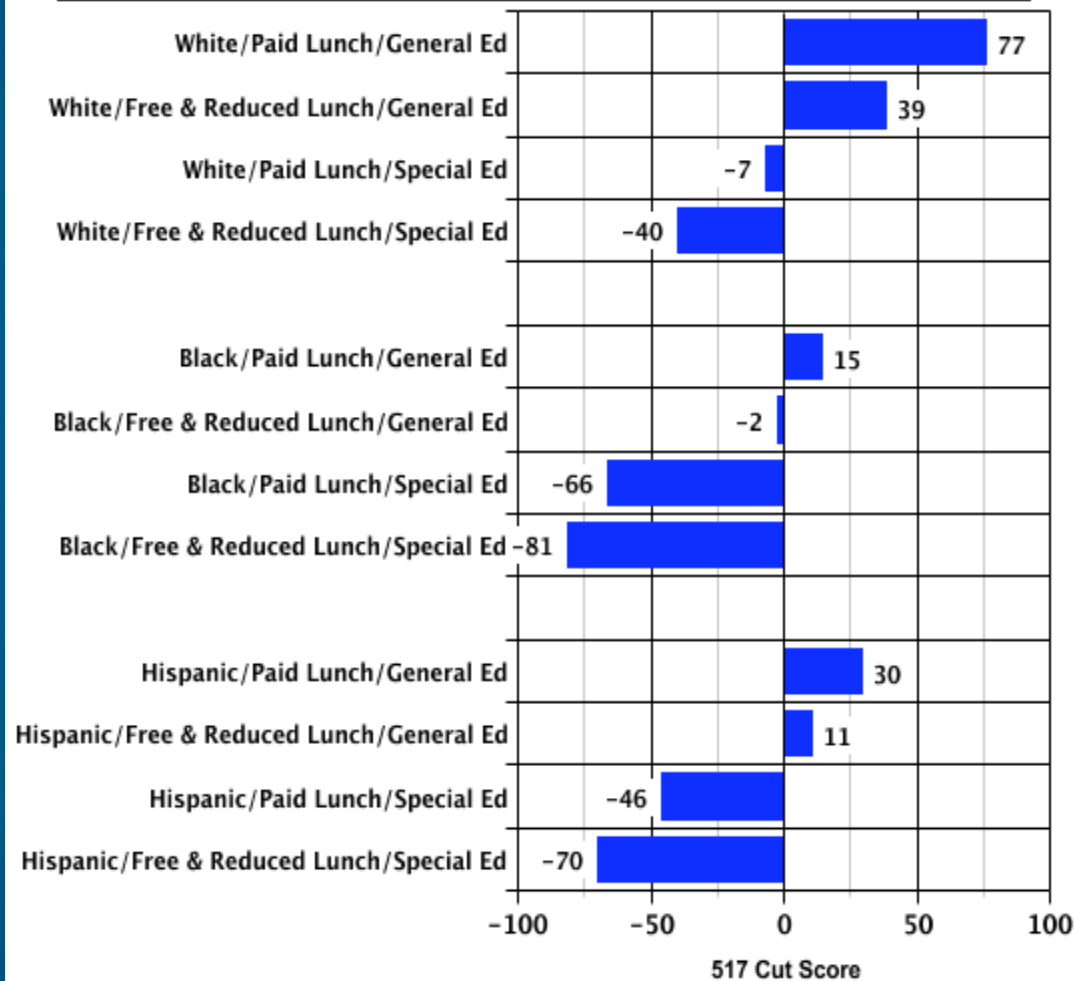


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**2007 ISTEP+ Grade 6  
State Average Points Above or Below the Scale Score (464)  
Mathematics Disaggregated by Ethnicity Sub-Groups**

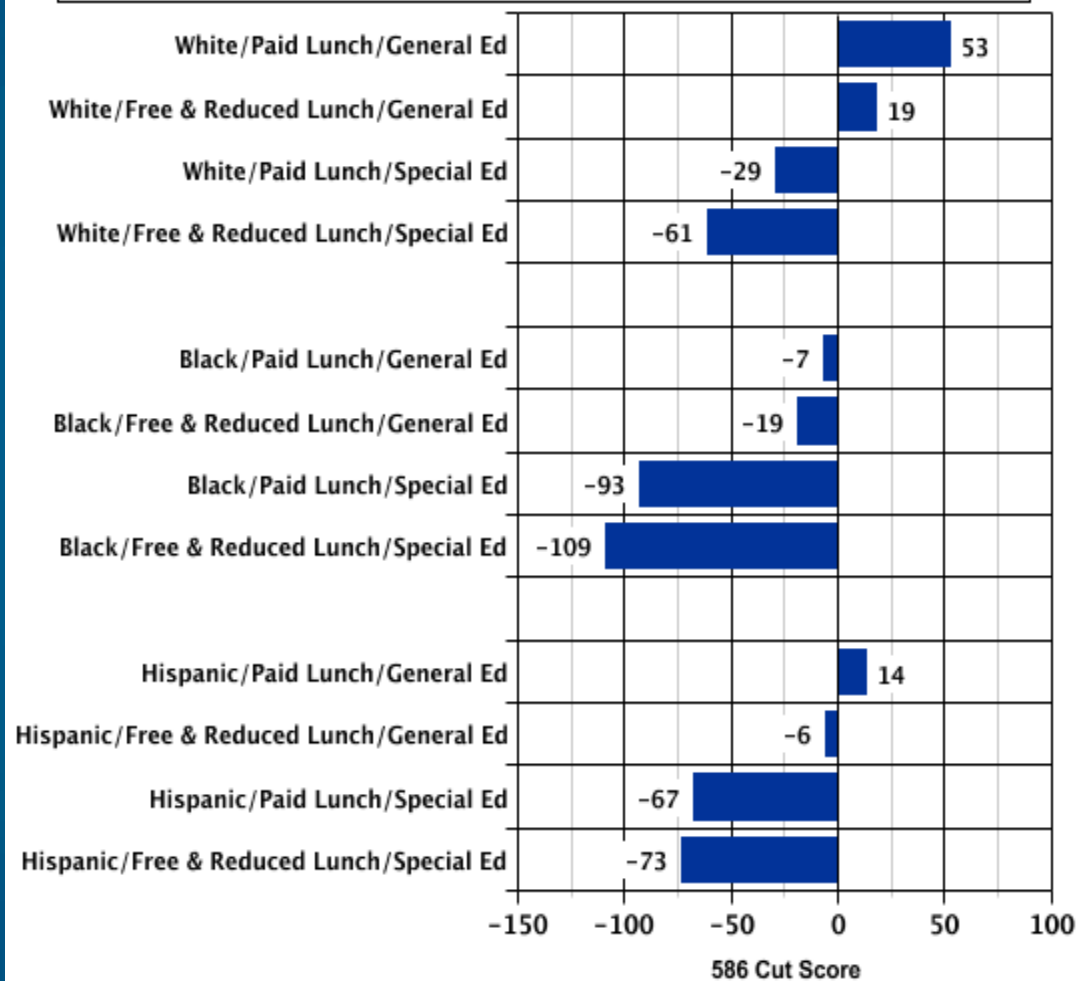


**2007 ISTEP+ Grade 8  
State Average Points Above or Below the Scale Score (517)  
Mathematics Disaggregated by Ethnicity Sub-Groups**



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**2007 ISTEP+ Grade 10  
State Average Points Above or Below the Scale Score (586)  
Mathematics Disaggregated by Ethnicity Sub-Groups**



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# Getting Data into the Classroom – Formative Assessments



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# How Do Teachers Use Data?

- Are classroom assessments used only to generate a final grade?
- Do teachers report that classroom assessment results align with statewide or standardized assessment results?
- Are teachers analyzing student results to adjust instructional practices and determine appropriate remediation?



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# Item Analysis Example

Student Name	Math Chapter Test – 2/12/08
Denise Bender	60%
Lonnie Cazukus	70%
Jose Contralas	65%
Bill Driver	80%
Wendy Flask	90%
Malcolm Frazier	90%
Sally Great	75%
Fred Hawes	55%
Orin James	70%
Joe Marcellus	95%
Latrell Lantern	80%
Linda Lyons	85%
Alicia Waterford	90%
Sean Winters	45%





# Item Analysis Example

		True / False Math Symbols					Multiple Choice Simple Equations					Word Problems					Estimation				
Student Name	Math Chapter Test	1 T	2 F	3 F	4 T	5 T	6 C	7 D	8 B	9 B	10 A	11 122	12 3	13 blue	14 Wendy	15 May	16 <4	17 >20	18 <-3	19 40	20 G
Denise Bender	60%		X	X											X		X	X	X	X	X
Lonnie Cazukus	70%	X								X		X			X			X		X	
Jose Contralas	65%													X	X		X	X	X	X	X
Bill Driver	80%													X	X	X				X	
Wendy Flask	90%												X		X						
Malcolm Frazier	90%											X			X						
Sally Great	75%											X	X	X	X	X					
Fred Hawes	55%							X				X		X		X	X	X	X	X	X
Orin James	70%														X		X	X	X	X	X
Joe Marcellus	95%														X						
Latrell Lantern	80%									X				X	X	X					
Linda Lyons	85%								X			X			X						
X is an incorrect answer																					
Alicia Waterford	90%											X			X						
Sean Winters	45%				X					X		X	X	X	X		X	X	X	X	X

# Item Analysis Example

		Math Symbols True / False					Simple Equations Multiple Choice					Word Problems					Estimation				
Student Name	Math Chapter Test	1 T	2 F	3 F	4 T	5 T	6 C	7 D	8 B	9 B	10 A	11 122	12 3	13 blue	14 Wendy	15 May	16 <4	17 >20	18 <-3	19 40	20 G
Joe Marcellus	95%														X						
Alicia Waterford	90%											X			X						
Wendy Flask	90%												X		X						
Malcolm Frazier	90%											X			X						
Linda Lyons	85%								X			X			X						
Bill Driver	80%													X	X	X				X	
Latrell Lantern	80%									X				X	X	X					
Sally Great	75%											X	X	X	X	X					
Lonnie Cazukus	70%	X								X		X			X			X		X	
Orin James	70%														X		X	X	X	X	X
Jose Contralas	65%													X	X		X	X	X	X	X
Denise Bender	60%		X	X											X		X	X	X	X	X
Fred Hawes	55%							X				X		X		X	X	X	X	X	X
Sean Winters	45%				X					X		X	X	X	X		X	X	X	X	X

# Contact Information:

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Indiana Department of Education

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